

ABSTRACT

A major structural change is occurring in the food chain segment of milk marketing channels in the North Central Region. Food chains increasingly are initiating central milk programs which represent various degrees of integration. Respondents in a survey gave savings obtained as the major reason for having central milk programs. Sources of savings included dealing with fewer suppliers, lower milk costs, and reduced delivery services. Savings in distribution costs was the main reason for chains operating their own milk plants. If the forces encouraging integration by food chains continue at the rate that existed at the time of the survey, 1968-69, a continuation of the recent structural trend can be expected.

Key Words: Fluid milk market, grocery stores, chain stores, milk marketing, vertical integration, centralization, savings, buyer, seller.

PREFACE

This report is published as part of North Central Regional Project NCM-38, "Dairy Market Adjustment Problems in the North Central Region." This project is a cooperative study involving agricultural experiment stations in the North Central Region and Kentucky and agencies of the U.S. Department of Agriculture.

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HIGHLIGHTS

Adoption of central milk programs by North Central and Kentucky food chains is causing a major structural change in milk marketing. A 1968-69 survey of food chains with central milk programs showed that chains realized savings from lower milk costs, dealing with fewer suppliers, and reduced delivery service. Chain representatives also reported receiving a more uniform product and achieving a more uniform milk merchandising policy.

Central milk programs for chains can include any of the following forms of integration in marketing channels: contracting for milk supplies on a divisional or regional level; using private brand labels; stocking only the private label or restricting the number of processor brands and their counter space; and threatening to integrate or actually integrating backward into fluid milk processing.

Sixty-five percent of the chains interviewed had some type of central milk program. About 80 percent of the supermarkets and 60 percent of the smaller stores served by 183 chains without processing plants were supplied milk on a centralized basis. The 13 chains that had processing plants packaged about 14 percent of all milk sold in retail stores in the study area.

Eighty-three percent of corporate chains had a central milk program, compared with 41 percent of voluntary and cooperative chains. Corporate chains clearly exercised tighter control over their programs than the others.

Seventy percent of the food chains with central milk programs but without plants merchandised fluid milk under their own private labels. These firms merchandised 56 percent of their fluid milk under private labels. Respondents favored private labels because the chain was able to build consumer loyalty to the chain brand; obtain milk more cheaply than if buying processor brands; exercise more control over display, advertising, and other promotional policies; sell milk at lower prices than those for processor brands; and gain more control over pricing at the supermarket level.

Chains with milk plants were generally more critical of processors and wholesale milk drivers and their unions than chains without plants. Both thought processor services and merchandising could be better geared to the changing needs of food chains. Chains emphasized price concessions in negotiations with processors, and were willing to perform more of the services that had traditionally been done by processors.

Chains with plants were strongly convinced that dairy trade practice regulations set up by States were injurious to consumers and not in the best interests of the dairy industry. Both they and the chains without plants agreed that the regulations were most beneficial to processors and that these regulations were not in the interests of their own firms.

A SURVEY OF CENTRAL MILK PROGRAMS IN
MIDWESTERN FOOD CHAINS

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INTRODUCTION

Background

Increased market power of food chains and the trend toward centralized buying and merchandising of fluid milk have markedly changed the buyer-seller relationships between food chains and milk processors. Because of these changes, food chains (including voluntary and cooperative groups as well as corporate chains) appear to have increased their bargaining power with fluid milk processors.

Large size is an important aspect of power for any firm, but probably the most important source of food retailers' market power is their ready access to consumers and control of the shelves from which consumers make selections. Increasing integration of retail and wholesale activities within a single firm also has helped shift market power from processors to retailers. Benefits obtained by chains through large size and integration have caused independent retailers and wholesalers to affiliate with voluntary or cooperative groups to try to gain some of the benefits achieved by corporate chains.

Voluntary and cooperative chains together accounted for about 46 percent of total grocery store sales in the United States in 1969 (app. table 1). Corporate chains held about the same share. Sales by unaffiliated independent stores (firms with fewer than 11 stores that were not affiliated with either a voluntary or cooperative group) accounted for only 8 percent of the total in 1969, compared with 15 percent in 1959 and 28 percent in 1954.

The degree of decisionmaking autonomy assumed by store managers within many food chains is also decreasing as buying and merchandising become more centralized. Thus, processors are increasingly negotiating terms of trade with the central offices of corporate chains and voluntary and cooperative group wholesalers rather than with managers of individual supermarkets and smaller stores.

Central fluid milk programs appear to have enabled food chains to obtain desired contract terms with processors. This has been accomplished by contracting for milk supplies on a divisional or regional basis; initiating and merchandising private label brands; restricting the number of processor brands stocked and counter space devoted to them; and threatening to integrate or actually integrating backward into processing. These actions have tended to

concentrate milk sales to large-volume supermarkets in the hands of national and regional processors. This has further enhanced their competitive advantage over independent processors. This new set of competitive relationships has impacts on dairy farmers, cooperatives, dairy marketing and processing firms, and consumers.

A conceptual framework was developed for classifying the forces that may affect the decisions of food chain executives concerning vertical integration backward in milk marketing channels (app. table 2). ^{1/} The forces--although not mutually exclusive--are (1) relative cost of performing a set of functions under a vertically integrated system compared with the cost of having these same functions performed by other firms under an open market price system; (2) factors that may influence the survival or growth of a firm; (3) factors that may have market power connotations; and (4) the legal and institutional environment--various laws, regulatory agencies, and bargaining groups.

The Study

The overall North Central regional research project was concerned with three phases of the fluid milk marketing sector: (1) problems and attitudes of producer cooperatives; (2) problems and attitudes of processors; and (3) problems and attitudes of food chains. This food chain portion of the project is concerned with only one phase of the project--policies and problems of food chains regarding fluid milk procurement and merchandising. The producer cooperative and fluid milk processor portions of the overall study were analyzed by other researchers. ^{2/} The findings of the three individual studies will be analyzed and brought together as a summary of the overall regional project.

Questionnaires were used in personal interviews with executives of a selected population of retail food chains. The selection process is described below. This survey obtained information concerning: (1) the extent and specific nature of central fluid milk procurement programs; (2) the reasons why food chains buy milk on a centralized basis and increasingly adopt various forms of vertical integration; (3) the factors associated with variations in milk programs; (4) the problems food chains are having with milk procurement, merchandising, and distribution; and (5) the attitudes of food retailers concerning various programs, institutions, firms, and organizations within the milk marketing system.

^{1/} Some of these ideas were presented in a paper by Alden C. Manchester, Vertical Coordination in Agriculture as a Field of Research, Workshop Proceedings, Vertical Coordination in Livestock Marketing, South. Regional Livestock Mktg. Res. Com., Houston, Tex., Mar. 11-14, 1969, pp. 1-12.

^{2/} Kent Frank Hoddick, An Analysis of Objectives and Adjustments of Dairy Marketing Cooperatives in the North Central States (unpublished master's thesis, Ohio State Univ., Columbus, 1970); and Robert Lee Oehrtman, A Hierarchical Factor Analysis of the Adjustment Problems Facing Milk Bottling Firms (unpublished Ph.D. thesis, Iowa State Univ. of Sci. and Technol., Ames, 1970).

Data for the 12 North Central States--Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin--plus Kentucky are included in this study.

Questionnaires were designed (and pretested) to obtain information from the headquarters (decisionmaking units) of all food chains and voluntary and cooperative group wholesalers located in the 13-State area that had four or more supermarkets or 10 or more stores. 3/

When the project was initiated, in the fall of 1967, secondary sources of information indicated that the headquarters (decisionmaking units) of 517 firms were located in the North Central Region and Kentucky. Telephone reconnaissance surveys indicated that 66 of these firms were either out of business or did not meet the specifications necessary to be included in the study. This left 451 firms to be included in the analysis (table 1). Of this number, the reconnaissance indicated that 159 firms (35 percent) did not have central milk programs and 34 other firms used the milk programs of their voluntary or cooperative wholesalers. This left 258 firms to be interviewed.

Table 1.--Classification of North Central Region and Kentucky firms with 4 or more supermarkets or 10 or more other stores, 1968-69

Classification of firms	All firms		Firms with own central milk programs	
	Number	Percent	Number	Percent
Interviewed <u>1/</u>	196	43	196	76
Not interviewed <u>2/</u>	62	14	62	24
On supplier's milk program ...	34	8	-	-
No central milk program	159	35	-	-
Total	451	100	258	100

1/ These firms had their own central milk programs and personal interviews were made (13 firms with plants and 183 firms without plants).

2/ These firms had their own central milk programs, but personal interviews were not made.

3/ "Supermarket" refers to a grocery store with sales of \$20,000 or more per week. "Decisionmaking units" refers to the central buying or negotiating points of food chains. They are usually at the home office of small chains and at the division offices of the larger national or regional firms.

Of these 258 firms, 62 were not interviewed for various reasons. In total, 196 usable questionnaires (183 firms without milk processing plants and 13 firms with plants) were obtained during June 1968 through December 1969. Interviews were conducted with firm executives responsible for developing and carrying out the chains' programs for procuring and merchandising milk.

Size distribution of the overall population of the firms that cooperated in the study, and of the firms that were not interviewed for various reasons is shown in appendix table 3. If size of firm is used as a criterion, one would conclude that the respondents were representative of the population under study, because the nonrespondents had essentially the same size distribution. Although findings in this study pertain to the respondents, they are probably representative of the entire population of the North Central Region and Kentucky.

The questionnaires contained four pages of general open-end questions and 11 pages of attitudinal questions, where firm representatives were asked to rate the importance of each statement by assigning a score on a scale ranging from 1 (of no importance) to 99 (very important). In three sections of the questionnaire, where respondents were asked to indicate agreement or disagreement with various statements, a scale ranging from -99 (strongly disagree) through 0 (uncertain or no opinion) to 99 (strongly agree) was used. ^{4/} General tabulations were made from the standpoint of number of firms in various categories and also the mean scores and relative frequencies of scores respondents indicated on the scaling questions.

Data for the two groups of firms--one group of 183 firms with central milk programs but without fluid milk processing plants, and the other group of 13 firms with milk processing plants--were analyzed separately.

CENTRAL MILK PROGRAMS OF CHAINS WITHOUT PROCESSING PLANTS

Characteristics of Central Milk Programs

The polar extremes of central milk programs are central buying and billing of milk for a group of stores and a food chain operating its own plant or plants. Programs between these two extremes include private label brands and various forms of limited service delivery such as unloading milk into the backroom or outside cooler, delivery to the firm's warehouse, or pickup by the food chain or wholesaler at the plant dock.

^{4/} A more detailed explanation of the scaling technique used in this study is presented in: Richard Francis Fallert, An Analysis of Buyer-Seller Relations Between Food Chains and Fluid Milk Processors in the North Central Region (unpublished Ph.D. thesis, Purdue Univ., Lafayette, Ind., 1971), pp. 227-230.

Of the 451 chains in the North Central Region and Kentucky, 13 firms had processing plants and the remaining 438 did not. Of those without plants, 245 firms (54 percent) had some form of central milk purchasing program. A higher proportion of corporate chains (84 percent) than of voluntary and cooperative groups (42 percent) had some type of central milk program (table 2).

The 183 food distributors without plants operated or had associated with them approximately 14,000 stores; slightly less than half were supermarkets (table 3). About 80 percent of the supermarkets and 60 percent of the other stores were supplied milk on a centralized basis. Corporate chains supplied milk on a centralized basis to 96 percent of their supermarkets and 76 percent of their smaller stores, while voluntary and cooperative wholesalers centrally supplied milk to 70 percent of the supermarkets and 58 percent of the other stores affiliated with them. Corporate chains with milk programs and without plants supplied milk to 92 percent of their stores on a centralized basis; voluntary and cooperative wholesalers supplied 62 percent of their stores; and all chains supplied milk to 70 percent of all stores associated with them.

Table 2.--Extent and characteristics of central milk programs of 451 North Central and Kentucky food distributors, 1/ 1968-69

Type of milk program	Corporate chains	Voluntary & cooperative chains	All chains
	----- <u>Number</u> -----		
Own milk program--without plants ..	161	84	245
Own milk program--with plants	10	3	13
On supplier's milk program	34	0	34
No milk program	39	120	159
Total	244	207	451
	----- <u>Percent</u> -----		
Own milk program--without plants ..	66	41	54
Own milk program--with plants	4	1	3
On supplier's milk program	14	0	8
No milk program	16	58	35
Total	100	100	100

1/ Voluntary and cooperative food wholesalers and all corporate chains operating 4 or more supermarkets or 10 or more food stores with headquarters (decisionmaking units) in the North Central Region and Kentucky.

Table 3.--Participation of stores associated with 183 North Central and Kentucky food distributors without milk plants in central milk programs, by type of store and firm, 1968-69

Store category	Corporate chains			Voluntary and cooperative chains			All chains		
	Super-markets	Other stores	All stores	Super-markets	Other stores	All stores	Super-markets	Other stores	All stores
----- Number -----									
Stores supplied milk on a centralized basis	2,758	494	3,252	2,604	4,112	6,716	5,362	4,606	9,968
Stores not supplied milk on a centralized basis	125	154	279	1,120	2,933	4,053	1,245	3,087	4,332
Total	2,883	648	3,531	3,724	7,045	10,769	6,607	7,693	14,300
----- Percent -----									
Stores supplied milk on a centralized basis	96	76	92	70	58	62	81	60	70
Stores not supplied milk on a centralized basis	4	24	8	30	42	38	19	40	30
Total	100	100	100	100	100	100	100	100	100

The 183 firms without plants had elected to use various forms of vertical coordination to assure at least some of their stores and supermarkets an adequate and reliable milk supply. The alternatives to using this middle-ground type of coordination for a food chain are complete autonomy of each individual store or supermarket in procuring milk (none of these were represented in the study) to complete ownership of processing plants by the chain (analysis for these firms is presented in the next section). Within this middle-ground organization, various degrees of coordination existed between buyers and sellers, ranging from verbal agreements to written contracts.

A food chain with a central milk program in which a high proportion of its stores participate and through which they obtain a large proportion of their milk supplies is probably in an advantageous bargaining position. Efficiency and bargaining advantages most likely are less when only a small proportion of stores participate in a central program. Two aspects must therefore be considered: (1) whether a central milk program exists, and (2) how fully it is utilized.

Ninety-four percent of the corporate chains supplied all of their stores on a centralized basis (table 4). In contrast, only 18 percent of the voluntary and cooperative chains supplied all their affiliated stores with at least a portion of their milk supplies. Of the stores that participated in the program, 84 percent of the corporate chains supplied them with 100 percent of their milk needs; only 4 percent of the participating stores acquired less than 76 percent of their total milk through the program (table 5). On the other hand, only 21 percent of the voluntary and cooperative groups with central programs supplied their participating stores with 100 percent of their milk, while 44 percent of these groups supplied their participating stores with less than 76 percent of their total milk needs.

Seventy-nine percent of the corporate chains with central programs had 100-percent participation. Not only did all stores participate in the program, but all stores obtained all of their milk supplies through the program. In contrast, only 12 percent of the voluntary and cooperative groups with central programs had 100-percent participation.

For both corporate chains and voluntary or cooperative groups, a higher proportion of supermarkets than of other stores were supplied milk on a centralized basis. Corporate chains were made up of a relatively higher proportion of supermarkets (82 percent); supermarkets accounted for only 35 percent of the stores associated with voluntary and cooperative wholesalers that offered central programs.

Economies of scale in supplying larger stores and in serving stores in densely populated, accessible areas were being realized increasingly by voluntary and cooperative wholesalers. Some officials of these groups indicated that this was particularly important when considering such programs as centralized milk buying and merchandising. They emphasized establishing and maintaining larger, more efficient retail outlets.

Table 4.--Proportion of stores supplied milk on a centralized basis, by type of firm, 183 North Central and Kentucky food distributors, 1968-69 ^{1/}

Percentage of owned or affiliated stores supplied milk on a centralized basis	Corporate chains	Voluntary & cooperative chains	All chains
		<u>Number</u>	
1 - 25	0	4	4
26 - 50	1	13	14
51 - 75	1	21	22
76 - 99	4	20	24
100	106	13	119
Total	112	71	183
		<u>Percent</u>	
1 - 25	0	6	2
26 - 50	1	18	8
51 - 75	1	30	12
76 - 99	4	28	13
100	94	18	65
Total	100	100	100

^{1/} Firms had central milk programs but no milk plants.

Table 5.--Sales of fluid milk by 180 North Central and Kentucky food chains, 1968-69 ^{1/}

Percentage of total milk sales that was supplied on a centralized basis	Corporate chains	Voluntary & cooperative chains	All chains
		<u>Number</u>	
1 - 25	0	1	1
26 - 50	2	9	11
51 - 75	2	20	22
76 - 99	14	24	38
100	94	14	108
Total	112	<u>2/68</u>	<u>2/180</u>
		<u>Percent</u>	
1 - 25	0	2	1
26 - 50	2	13	6
51 - 75	2	29	12
76 - 99	12	35	21
100	84	21	60
Total	100	100	100

^{1/} Firms had central milk programs but no milk plants.

^{2/} Data for the additional 3 firms in the overall population were not obtainable.

Seventy percent of corporate chains without milk bottling plants had some type of central milk program, compared with 42 percent of the voluntary and cooperative food wholesalers. They also held tighter control (table 6). The most important differences were:

1. A greater percentage of corporate chain stores participated in their chains' milk programs than did stores associated with voluntary or cooperative wholesalers.

2. Larger proportions of the milk needs of participating stores of corporate chains were purchased under central programs than was true for participating stores associated with voluntary or cooperative groups.

3. Corporate chains more generally controlled prices charged consumers for milk, brands of milk sold in stores, milk counter displays, advertising, and other merchandising practices than did voluntary and cooperative wholesalers.

4. A higher percentage of voluntary and cooperative wholesalers with central milk programs had private label brands than corporate chains, but a lower percentage of total voluntary and cooperative milk sales was under private label than under corporate chains.

Milk Purchasing Arrangements

Most chains with central fluid milk programs did not have written agreements with processors, but negotiated with them for prices, services, or other features of their program an average of five times a year. About half the firms negotiated a fixed price on milk purchases, while the others used a formula where the price paid for milk by the processor was the most important variable. Even where the fixed price method was used, the agreement--whether written or verbal--was usually open-ended for the duration of the agreement. Enough flexibility in pricing thus existed to allow for major changes in milk suppliers' costs. If raw milk prices changed, for example, a new bargaining session was called and, normally, a new price to the retailer established.

Under the formula system, the pricing procedure was stipulated in the agreement, and changes in the supplier's costs were automatically reflected in the costs of milk to the chain. Under the fixed price system, these same factors usually worked to alter the cost of milk at the chain level, but the procedure was less automatic. Also, under the fixed price system, suppliers' reactions to cost changes generally varied from market to market, depending on market structure and institutional factors.

In some instances, the terms of the agreement were written, but signatures of buyers and sellers were omitted. The accessibility of a specific account to outside suppliers varied substantially, depending upon the type of agreement a buyer decided to use and also upon the length of time of the agreement. Some processors accepted bids on contracts to supply all stores and supermarkets within a specified area for a stipulated time period. Once

Table 6.--Characteristics of central milk programs of 183 North Central and Kentucky food chains without fluid milk plants, 1968-69 1/

Characteristics	Corporate chains	Voluntary and coop. chains	All chains
Control over participation:			
Chain stores served by central milk program <u>2/</u>	92	62	70
Chains that discourage stores from buying milk from other sources	87	59	76
Stores in milk program buying milk from other sources <u>3/</u>	17	80	42
Milk purchased from other sources (stores in milk program) <u>3/</u>	4	29	13
Control over merchandising:			
Chain determined store selling price	87	32	66
Chain determined brands stocked ..	97	54	80
Chain regulated counter displays..	73	45	62
Chain controlled advertising and promotion	93	65	82
Private label brands:			
Chains with private label brands..	63	79	70
Milk in central program private label (for chains with private label) <u>3/</u>	62	52	56
Milk in central program private label (for all chains with central milk program) <u>3/</u>	39	41	40

1/ 112 corporate food chains and 71 voluntary and cooperative food wholesalers.

2/ Weighted average percentages.

3/ Simple average of individual chain percentages.

this type of contract was entered into, the portion of the market it covered was closed to alternative suppliers to a far greater extent than with written open-ended contracts or verbal agreements.

Regulations Influencing Milk Purchasing Arrangements

Federal milk marketing orders influenced pricing at the raw milk supply level throughout the area covered by this study. Thus, except for misalignment of prices among Federal order markets and differences in price premiums negotiated by producer cooperatives above Federal order levels, changes in raw milk costs generally affected all suppliers within a market uniformly for both time and magnitude.

Dairy trade practice regulations prohibiting such practices as sales below cost, price discrimination, and interest-free loans existed in six of the 13 States. These regulations affected the bargaining and pricing aspects of milk programs, with important implications for both retailers and suppliers.

Only 21 percent of the food distributors located in States with dairy trade practice regulations had written agreements with their suppliers, compared with 42 percent of the firms located in States without such regulations. About half the firms in States both with and without dairy trade practice regulations negotiated a fixed price.

All formulas for establishing a milk price at the chain level included the price paid by the processor. Only 20 percent of these formulas explicitly included other factors, such as cost of containers, a specific allowance for delivery, or wage rates for deliverymen.

Regulatory activities and decisions of the Federal Trade Commission also affected milk purchasing agreements by prohibiting discriminatory practices. For example, a recent Federal Trade Commission ruling stipulated that volume discounts must be based solely on volume of delivery at each individual store rather than on the aggregate volume of a food chain's account. 5/

Equipment Furnished by Processors

Of the 183 firms questioned, representatives of 18 indicated that milk processors furnished display cases or other equipment as part of the arrangement. Respondents of 13 percent of the voluntary and cooperative wholesalers and 8 percent of the corporate chains indicated that this was true. All firms whose representatives indicated that milk processors furnished them with display cases or other equipment were located in States without dairy trade practice regulations. Firm representatives in States with dairy trade practice

5/ Federal Trade Commission, In the Matter of National Dairy Products Corporation, Docket No. 7018, Findings, Conclusions, and Opinions of the Commission, July 1966.

regulations were well aware that this type of arrangement was against the regulations and tended to emphasize this fact.

Frequency of Contact by Milk Processors

On the average, other milk processors contacted food distributors about eight times a year to obtain their milk business. However, this varied considerably from firm to firm and from market to market. Respondents of a few firms indicated that other processors were firmly convinced they were fully satisfied with their current suppliers, and thus they had no contacts from processors other than their current suppliers. At the other extreme, 3 percent of the firms' representatives stated that other milk processors contacted them almost weekly. Eighteen percent of the firms' representatives indicated that other processors contacted them about once a year in efforts to obtain their milk business. No significant difference was found in this regard between firms located in States with dairy trade practice regulations and those in States without them.

Reasons for Having a Central Milk Program

Food chain personnel indicated the relative importance of various suggested reasons for having central milk programs (table 7). They chiefly emphasized the dollar savings obtained. Sources of savings included lower milk cost, economies obtained by dealing with fewer suppliers, and savings from reduced delivery services required of suppliers. Other important reasons included a more uniform product and attainment of a more uniform merchandising policy.

Dairy trade practice laws and private label brands had a significant impact on the attitudes of executives of food chains with central fluid milk programs. ^{6/} Savings from reduced delivery services appeared to concern food chains with private label brands more than those without.

Where dairy trade practice laws existed, they seemed to temper the attitudes of food chain executives toward milk costs and services. Given this finding, one might hypothesize that bargaining between chains and processors was considerably more intensive in States without dairy trade practice regulations than in States with them.

Although no detailed cost studies were made, a general practice of both voluntary and cooperative groups was to charge retail stores a 2-percent billing fee on all milk purchased through the central milk program. Some executives indicated that a central milk program, from the viewpoint of voluntary

^{6/} The multiple regression model was designed to be used in this study as an exploratory tool to determine whether the scores of retailers could be associated with various selected variables and classifications of firms. See footnote 4.

Table 7.--Scores assigned to "reasons for having a central milk buying program" by 182 North Central and Kentucky food chains without fluid milk plants, 1968-69 1/

Reasons or considerations <u>2/</u>	Importance of decision to buy milk on a centralized basis:		
	Mean score	Relative frequency of scores <u>3/</u>	
		1-39	40-69 70-99
General reasons:			
To obtain milk at lower cost	80	10	9 81
To provide a more uniform merchandising policy	74	13	14 73
To provide stores with more uniform products	72	16	14 70
To reduce accounting and administrative expense	64	22	19 59
To obtain services such as preordering or central billing	57	30	19 51
To facilitate obtaining private label milk	56	35	8 57
Reasons related to services:			
To facilitate central billing	62	26	15 59
To make it easier to obtain drop delivery or some similar type of limited service delivery	51	39	12 49
To provide the chain special salespersons from supplier to advise on merchandising	37	53	21 26
To facilitate preordering of milk	29	65	11 24
To make possible pickup of milk at plant dock	11	88	4 8
Reasons related to savings:			
Savings made in dealing with only one or a few suppliers	68	19	14 67
Savings from reduced delivery services required of suppliers	62	30	9 61
Obtaining private label milk at lower cost	58	36	4 60
Volume discounts granted by suppliers	57	34	13 53
Savings made through central billing	55	32	20 48

1/ Scores of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly important).

2/ Reasons are arranged according to rank of mean score.

3/ Total frequency equals 100.

or cooperative group wholesalers, formed a convenient method of utilizing existing electronic data processing and billing facilities.

The attitudes of all executives concerning reasons for having a central milk buying program were generally not affected by such factors as size of firm, type of firm (national or regional versus local), square miles served per store, extent of area served by the chain, or percentage of stores in the program.

Reasons Some Stores Were Not in Central Milk Programs

Only 6 percent of the corporate chains with central milk programs owned stores that did not participate in the program. The primary reasons for non-participation were that the stores were located in areas that could not be served efficiently, and that strong local preferences made it desirable for some stores to stock other brands of milk. These stores tended to rely on local fluid milk suppliers (app. table 6).

In contrast, 84 percent of the voluntary and cooperative group wholesale with central milk programs had stores associated with them that did not choose to participate. The major reasons indicated by executives of these wholesale for affiliated stores not participating in their milk programs were that most or all nonparticipating stores were independently owned and thus were not closely controlled by the food chain; stores were not located where they could be served efficiently under the program; and strong local consumer preference made it desirable for some stores to stock other brands of milk. These considerations vividly point out the tighter control corporate chains exercised over their stores compared with that exercised by voluntary and cooperative group wholesalers--an important factor in the relationship between processor and retailer.

Many voluntary and cooperative stores did not have the milk storage facilities needed to participate in a central program and could be better served by local fluid milk processors. Store owners in States with dairy trade practice laws less frequently had loans or equipment from local milk dealers that tied them to those dealers than store owners in States without these laws.

Private Labeling of Milk

Initiation of private label brands acted as a catalyst to central milk programs and diminished the importance of established processor brands. Because of the relative uniformity of fluid milk quality, food chains were able to use various merchandising and pricing plans to increase the volume of private label sales. Depending upon the competitive conditions within a market, increased sales of private label milk of a given food chain could be achieved by attracting customers from the supermarkets of competitors or by persuading customers to substitute the private label brand for processor brands.

Table 8.--Extent of merchandising private label brands, by type of firm, 183 North Central and Kentucky food chains without fluid milk plants, 1968-69

Extent of private labeling	Corporate chains <u>1/</u>	Voluntary & cooperative chains <u>1/</u>	All chains
	----- <u>Percent</u> -----		
Chains with private label brands	63	79	70
Milk in central program private label (for chains with private label) <u>2/</u>	62	52	56
Milk in central program private label (for all chains with central milk program) <u>2/</u>	39	41	40

1/ 112 corporate food chains and 71 voluntary and cooperative food wholesalers.

2/ Simple average of individual chain percentages.

Merchandising private label brands gave the chain greater freedom to shift sources of supply--even to the point of setting up its own processing facilities. With private label brands, food chains had more control over pricing and merchandising of milk than with processor brands. In addition to the private label brand, it was a common practice to sell one processor's brand of milk--that of the dairy supplying the private label brand. Thus, a processor bidding on a private label contract commonly had not only the private label business at stake, but also an important outlet for his own brand. These findings agree with those of Williams and Vose. 7/

Sixty-three percent of the corporate chains and 79 percent of the voluntary and cooperative groups with central milk programs merchandised fluid milk under their own private labels in 1968-69 (tables 8 and 9). Overall, 70 percent of chains with central milk programs used private labels. According to estimates by food chain executives, 56 percent of all milk sales of firms using private labels was merchandised under private labels. Even though a smaller proportion of corporate chains had private label brands, they sold a higher proportion (62 percent) of milk under private label than did affiliated stores of voluntary and cooperative groups (52 percent).

When milk sales of all firms with central milk programs were considered, whether or not the firms had private labels, an estimated 40 percent of total milk sales under central programs was merchandised under private labels.

7/ Sheldon W. Williams and David A. Vose, Extent and Significance of Private Label Brands of Ice Cream and Milk, Jour. Dairy Sci., Apr. 1966, pp. 418-419.

Table 9.--Whole milk sold by stores in central milk program under private label, 183 North Central and Kentucky food chains without fluid milk plants, 1968-69

Range in percentage of private label	Corporate chains	Voluntary and coop. chains	All chains	Corporate chains	Voluntary and coop. chains	All chains
	Number		Percent			
Information refused	2	2	4	2	3	2
0	41	15	56	37	21	30
1 - 10	1	1	2	1	1	1
11 - 20	3	3	6	3	4	3
21 - 30	5	5	10	4	7	6
31 - 40	8	6	14	7	9	8
41 - 50	8	17	25	7	24	14
51 - 60	10	8	18	9	11	10
61 - 70	8	6	14	7	9	8
71 - 80	10	7	17	9	10	9
81 - 90	9	0	9	8	0	5
91 - 100 1/	7	1	8	6	1	4
Total	112	71	183	100	100	100

1/ It is not uncommon for individual stores or supermarkets owned by a corporate chain or affiliated with a voluntary or cooperative group to be 100-percent private label, but only 3 firms indicated that all of the milk sold by their stores throughout their district was private label.

Thirty-seven percent of the corporate firms with private label brands merchandised over 70 percent of their fluid milk under private labels (table 10). In contrast, only 15 percent of the voluntary and cooperative groups that had private label brands merchandised over 70 percent under private labels.

The 123 food chains without plants that had private labels had initiated them since 1951 (table 11). Only 6 percent of the corporate chains without plants initiated private label brands in 1952-59. In contrast, 43 percent of the voluntary and cooperative chains with central programs and private label brands initiated them before 1960. Initiation of private label brands by voluntary and cooperative chains was particularly pronounced in 1958, 1960, 1963, and, to a lesser extent, 1968. For corporate chains, initiation of private label brands was pronounced from 1963 through 1967. The median year of private label initiation for corporate firms was 1964; for voluntary and cooperative firms, 1960; and for all firms, 1963.

Food chains emphasized that private labels build consumer loyalty to the chain's own brand (app. table 7). Other reasons for using private labels, rated about equally, were to: (1) obtain milk cheaper; (2) exercise more control over display, advertising, and other promotional policies; (3) sell milk at lower prices than processor brands; and (4) gain more control over pricing at the supermarket level.

No significant differences were found in the reasons for having private label brands given by executives of food chains of different sizes. This suggests that small chains initiated central milk programs and private label brands to obtain some of the advantages that accrue to large chains.

Executives of large national and regional firms felt more strongly than those of local firms that private label milk gives the retailer more control over pricing at the store level. Corporate chain respondents scored the item "private label facilitates going into processing in own plant" significantly higher than did voluntary and cooperative group respondents. This implies that in the future, corporate chains would be more likely than voluntary and cooperative groups to process milk in their own plants.

Firms Without Private Label Brands

Forty-one corporate chains (37 percent) and 15 voluntary or cooperative chains (21 percent) did not have private label brands in 1968-69. A high proportion of corporate firms without private labels (61 percent) were small chains--four to nine supermarket equivalents in size--and only three corporate firms without private labels (7 percent) were classified as large chains--50 or more supermarket equivalents (two grocery stores equal a supermarket).

The primary reasons given by these food distributors for not having private label brands were: (1) consumers strongly preferred well-known brands of milk; (2) the food chain followed a policy of marketing only well-established processor brands of food; and (3) a good processor brand was needed to draw trade and the chain preferred to stock only one brand (app. table 9).

Table 10.--Stores in central milk programs selling milk under private label, 123 North Central and Kentucky food chains without fluid milk plants, 1968-69 1/

Range in percentage of private label sales	Corporate chains	Voluntary and coop. chains	All chains	Corporate chains	Voluntary and coop. chains	All chains
	Number	Number	Number	Percent	Percent	Percent
1 - 10	1	1	2	2	2	2
11 - 20	3	3	6	4	6	5
21 - 30	5	5	10	7	9	8
31 - 40	8	6	14	12	11	11
41 - 50	8	17	25	12	31	20
51 - 60	10	8	18	14	15	15
61 - 70	8	6	14	12	11	11
71 - 80	10	7	17	14	13	14
81 - 90	9	0	9	13	0	7
91 - 100 <u>2/</u>	7	1	8	10	2	7
Total	69	54	123	100	100	100

1/ 2 corporate firms and 2 voluntary firms with private label brands refused to release data pertaining to their private label programs.

2/ It is not uncommon for individual stores or supermarkets owned by a corporate chain or affiliated with a voluntary or cooperative group to be 100-percent private label, but only 3 firms indicated that all of the milk sold by their stores throughout their district was private label.

Table 11.--Firms initiating private label brand, by year and type of firm,
123 North Central and Kentucky food chains without fluid milk plants, but
with private label brands, 1968 1/

Year	Corporate chains	Voluntary and coop. chains	All chains	Corporate chains	Voluntary and coop. chains	All chains
	----- <u>Number</u> -----			----- <u>Percent</u> -----		
Prior to 1952	0	0	0	0	0	0
1952	0	1	1	0	2	1
1953	1	2	3	1	4	2
1954	1	1	2	1	2	2
1955	0	5	5	0	9	4
1956	1	2	3	1	4	2
1957	2	2	4	3	4	3
1958	0	8	8	0	14	7
1959	0	2	2	0	4	2
1960	4	7	11	6	13	9
1961	6	1	7	9	2	6
1962	4	3	7	6	5	6
1963	13	8	21	19	15	17
1964	7	2	9	10	4	7
1965	11	3	14	16	5	11
1966	8	2	10	12	4	8
1967	8	1	9	12	2	7
1968	3	4	7	4	7	6
Total	69	54	123	100	100	100

1/ 2 corporate firms and 2 voluntary firms with private label brands
refused to release data pertaining to their private label programs.

Respondents in States with dairy trade practice regulations were significantly more inclined to agree with the statement that suppliers would not sell private label milk cheaper (for equal volumes and types of service) than their own brands. Thus, it appears that dairy trade practice regulations had a significant influence on terms of trade and pricing policies of processors.

On the other hand, national and regional firms were less inclined than local firms to agree that suppliers would not sell private label milk cheaper than processor brands. Apparently, national and regional firms had considerably more bargaining power than local firms over terms of trade on their private label milk business--especially in States without dairy trade practice regulations.

Plans for Introducing Private Label Milk

Five (12 percent) of the 41 corporate firms and five (33 percent) of the 15 voluntary and cooperative wholesalers that had central milk programs but did not have private label brands were considering the merits of introducing them. This indicates that voluntary and cooperative groups are good prospects for continued initiation of private label programs.

Factors Determining Processors Patronized

Suppliers of Private Label Milk

In selecting private label suppliers, food chains merchandising private labels placed about equal emphasis on three factors: quality of product, quality of service provided by the processor, and the processor's ability to supply needed volumes of milk (app. table 10). To a considerably lesser extent, food chain respondents considered the following as factors in choosing a processor: price paid for milk, popularity of processor's brand with consumers, and location of processor's milk plants in relation to location of the chain's stores.

Factors associated with price, services, merchandising, free equipment, and credit furnished by processors appeared to be of less importance to food chains in States with dairy trade practice regulations than to those in States without these regulations. Again, this seems to reflect the impact of dairy trade practice regulations on the conduct of buyers and sellers in fluid milk markets.

In general, corporate firms tended to place more emphasis on price of private label milk in choosing suppliers than did voluntary and cooperative firms. Local firms tended to give more consideration to the location of the processor's milk plants in relation to the location of the chain's stores than did national and regional firms. Small firms were more inclined to consider credit furnished by the processor when choosing a supplier than larger firms. This latter finding agrees with the conclusion of the National Commission on Food Marketing that "Large chain stores are adequately financed and are less

likely to be interested in loans, free equipment, and advertising allowances than are the smaller retailers." 8/

Suppliers of Processor Brands of Fluid Milk

Popularity of a processor's brand with consumers was the most important factor in determining which processors were patronized (app. table 11). Quality of product, quality of service provided by the processor, and the processor's ability to supply the chain adequately with milk were other important factors. Respondents considered the cost of milk to be somewhat less important in choosing a processor brand supplier than in choosing their private label supplier.

Factors considered significantly less important by food chain officials in States with dairy trade practice regulations than in States without such regulations were the processor's ability to supply the chain adequately with milk; price paid for processor brand milk; the chain's policy as to types of suppliers patronized; credit furnished by the processor; and equipment furnished by the processor.

Factors considered significantly more important by corporate chains than voluntary and cooperative wholesalers in selecting a processor were the processor's ability to supply the chain adequately with milk, and personal relationships between owners of the dairy and of the food chain. Firms with private label milk were less interested in quality of processor services than firms with only processor brands. Local firms gave more consideration to equipment furnished by the processor than national or regional firms.

Reasons for Changing Milk Suppliers

Suppliers of Processor Brands

Thirty-nine food chains had changed suppliers of processor brands of milk during the 5 years before the survey. The most important reasons for changing were to obtain more or better service, cost savings, and a higher quality product (app. table 12).

Both corporate firms as a group and firms without private label milk tended to give more consideration to merchandising services offered by the supplier than did voluntary or cooperative food wholesalers or firms that had private label milk. This suggests that firms with private label milk had more control over shelf space and pricing policies and thus depended more on price competition and shelf space allocation in their milk merchandising programs than firms without private label.

8/ National Commission on Food Marketing, Organization and Competition in the Dairy Industry, Tech. Study 3, Washington, D. C., U.S. Gov. Printing Off., 1966, p. 171.

Suppliers of Private Label Brands

The most important reasons for changing suppliers of private label brands of milk during the 5 years before the survey for 34 firms that made such changes were to obtain cost savings and more or better service (app. table 12).

Firms that operated stores over a wide area were more inclined to change suppliers of private label milk to obtain more or better service than firms with stores in a more concentrated area. Firms with a small percentage of stores in the milk program, firms with a low store density, and small firms also tended to emphasize the need for more or better service.

Arguments Used in Negotiating With Processors

Representatives of food chains indicated that, in their negotiations with processors, the contention that another processor offered a lower price was the most effective argument used (app. table 13). Of lesser effectiveness were such arguments as (1) suggesting that the firm might transfer business to a competitor unless the processor would make concessions; (2) promise of a larger volume if the processor would grant more favorable terms; and (3) criticism of inadequacies in the processor's product or service.

This ranking of arguments used in negotiations with processors indicates that most retail firms tended to emphasize price rather than more or better service. They seemed to be willing to perform more of the functions within the marketing channel if processors would make price concessions.

The most significant difference among firms in arguments used was associated with dairy trade practice laws. Here again, representatives of firms located in States with these regulations tended not to emphasize the effectiveness of negotiating terms of trade with milk processors.

Firms with private label brands and national and regional firms were more inclined to argue that they could promise a larger volume of sales if the processor would grant more favorable terms. Since the retailer controlled shelf space, an important item in milk merchandising, assurance of a larger volume of sales if the processor would grant more favorable terms seems to be a logical argument.

Reasons Food Chains Did Not Operate Milk Plants

The most important reasons given by food chains for not operating milk plants were (1) volume of milk sales was insufficient to permit efficient operation of a processing plant; (2) the firm could not make appreciable savings by doing its own processing; and (3) the firm wished to avoid getting involved in another operation (app. table 14). In other words, these firm representatives generally felt that, in evaluating their own situations, they achieved a more favorable competitive position through some vertical coordination than they would through complete vertical integration and operating their own milk processing plants. Economies of scale in both milk processing and

distribution are important, and these representatives seemed to realize that volume of milk sales was insufficient to permit them to efficiently operate their own plants. On the other hand, most respondents seemed unaware of what scale of processing operation was actually necessary for efficiency. In this regard, many firms seemed to be pondering the vertical coordination and integration patterns of their competitors and using these business activities as benchmarks for their own decisionmaking.

As expected, size of firm and extent of area served by the firm were the most significant variables influencing the attitudes of food chain respondents toward operating their own milk plants.

Based on the mean scores of all 173 respondents to statements in this section of the questionnaire, the statement "waiting for an opportune time to build or buy a plant" was considered the least appropriate. However, as in all analyses, one should be cautious in interpreting averages. In response to this statement, 10 percent of the respondents scored this statement within the range of 70 to 99 (highly important). Thus, these executives must have felt that the firms they represented were giving the possibility of plant construction at least some consideration. High scores for this statement were more frequent for the larger firms and for corporate chains. This indicates that future vertical integration into milk processing by food chains is most likely to be done by such firms.

CENTRAL MILK PROGRAMS OF FOOD CHAINS WITH PROCESSING PLANTS

All food chains that integrated backward in the marketing channel and operated milk plants in the North Central Region and Kentucky cooperated in the study, so the data in this section represent the population under investigation. ^{9/}

Plant Operations

Thirteen schedules were obtained from representatives of nine different food chains. In most instances, the plant manager was the respondent. Where the food chain operated more than one plant, each plant was considered a firm and the data obtained at the plant level were supplemented by information from the home office. These 13 plants were located in seven of the 13 States included in the study. Two plants were in Illinois, one in Indiana, one in Kansas, two in Michigan, four in Missouri, one in Nebraska, and two in Ohio. Ten plants were operated by corporate chains, two by cooperative wholesalers, and one by a voluntary wholesaler.

Approximately 105 million pounds of fluid milk products was packaged in

^{9/} Food chains that operated their own milk plants but custom-packaged a substantial volume of milk for other firms are excluded from this analysis.

December 1968 by the 13 firms. This represented approximately 8 percent of the total fluid milk products sold in the study area.

The exact proportion of fluid milk products that goes through retail stores is difficult to establish, but a reliable estimate is at least 50 percent. ^{10/} Thus, if it is assumed that 95 percent of the milk sales from plants of vertically integrated retailers was sold through retail stores and 52 percent of total milk sales of all processors was sold through retail stores, an estimated 14 percent of all milk sold through North Central and Kentucky retail stores was packaged in plants owned by the above food chains.

Ten of the 13 plants were constructed by food chains--in most instances close to the chains' warehouses or distribution centers. Three had been purchased from processors. One firm had begun packaging its own milk supplies as early as 1936. Three firms began packaging their own milk in the 1950's, and the other nine in the 1960's--six of these since 1965. All firms packaged a full line of fluid milk products.

Seven firms had a plant volume of over 6 million pounds in December 1968. One firm's monthly volume was 4.0 to 5.9 million pounds; three firms had 2.0 to 3.9 million pounds; one had 1.0 to 1.9 million pounds; and one had a monthly plant volume of 200,000 to 499,000 pounds.

The effect of increased volume on plant processing efficiency has been well documented. ^{11/} However, three food chains in the North Central Region with fewer than 50 supermarket-equivalents were operating their own milk plants at the time of the survey and one of these firms had only nine supermarkets. Under certain situations, therefore, relatively small food chains apparently successfully operated milk plants.

Savings in distribution costs was the important reason for food chains operating their own milk plants and distribution systems (app. table 15). The primary savings seemed to be in delivery of milk from the processing plant dock to the dairy case in the store, including dock, sidewalk delivery, or other limited-service delivery.

The relation of milk plant location to the location of stores was the most important factor given in determining plant location (app. table 16).

^{10/} Alden C. Manchester, Pricing Milk and Dairy Products--Principles, Practices, and Problems, U.S. Dept. Agr., Agr. Econ. Rpt. No. 207, June 1971, p. 11.

^{11/} Gary Devino and others, Economies of Size in Large Fluid Milk Processing Plants, Vt. Agr. Expt. Sta. Res. Rpt. MP62, May 1970; D. W. Cobia and E. M. Babb, Determining the Optimum Size Fluid Milk Processing Plant and Sales Area, Purdue Univ. Agr. Expt. Sta. Res. Bul. No. 778, May 1964; E. M. Babb, Effect of Assembly, Processing, and Distribution Cost on Marketing Fluid Milk, Purdue Univ. Agr. Expt. Sta. Res. Bul. No. 828, Feb. 1967; and Fred Webster and others, Economies of Size in Fluid Milk Processing Plants, Vt. Agr. Expt. Sta. Bul. 636, 1963.

In most instances, the plants were built adjacent to the food chains' warehouses or distribution centers and this factor was also highly rated. Highways and transportation facilities serving the location were also important.

Characteristics of Central Milk Programs

The 13 firms operated or had associated with them some 2,400 stores, of which about 70 percent were supermarkets. About 98 percent of these stores were supplied milk on a centralized basis. The average plant served stores over an area with a 165-mile radius, ranging from 60 to 350 miles.

All 13 firms packaged private label milk. Private label brands were introduced in the 1930's by three of the firms, in the 1950's by three others, and in the 1960's by seven firms--three since 1965.

Processing plant ownership by chains tends to foreclose this segment of the market to outside suppliers. A simple average of 87 percent of the total milk sales of the 13 firms operating their own plants was private label. Only one of the 13 firms used an outside supplier of private label milk to supplement the output of its own plant. Three of the 13 firms were 100-percent private label and had no other processor brands of milk in their stores. In most other cases, there was usually only one other processor brand in the stores of the remaining firms.

Supplemental Packaged Milk Supplies

Seven of the 13 firms with plants purchased at least a portion of their milk needs from other suppliers. Thus, in nearly half the cases, this portion of the market was entirely closed to other processors.

By using supplemental packaged milk supplies from other processors to balance their overall milk needs, large food chains can readily integrate backward into milk processing. A food chain that has a relatively high concentration of supermarkets throughout a large area can plan plant operations from the standpoint of optimal plant location, size, and operating capacity.

Operational flexibility was generally achieved by utilizing other fluid milk processors to supply a portion of the milk needs in all supermarkets or to supply supermarkets in fringe areas. This flexibility provided vertically integrated food chains assurance that a new plant could begin operation at full capacity or at whatever initial level of capacity desired.

Four factors of major concern to executives of food chains with processing plants in choosing processor brand suppliers were (1) the processor's ability to supply the chain adequately with milk; (2) quality of product; (3) popularity of the processor's brand with consumers; and (4) quality of service provided by the processor (app. table 17). Different food chains seemed to have different philosophies in regard to suppliers of processor brands. A few chains felt no need for processor brands in their stores. Some stocked processor brands as an "insurance policy" or to avert the possibility of being

out of milk in case of plant breakdowns, labor trouble, or icy road conditions. Other chains maintained these brands to accommodate the tastes of customers in local markets. The latter viewpoint seemed most important. However, with local processors rapidly going out of business, the trend toward having only one brand of milk in a chain's stores (in many cases only the private label brand) is increasing.

Arguments Used in Negotiating With Processors

Food distributors with plants normally negotiated for only a small proportion of their milk supplies. Generally, processor brands were carried for a specific purpose, as noted in the preceding section, and therefore negotiations with suppliers over the price of the product concerned them much less than firms that did not have plants. Nevertheless, the arguments used most frequently by firms with plants in negotiations with milk suppliers were: (1) criticizing inadequacies in processor's product or service; (2) suggesting that the firm may transfer business to a competitor unless the processor would make concessions; and (3) contending that another processor offered a lower price (app. table 18).

The mean scores on all arguments listed, however, were unusually low and there was an extremely bimodal distribution of scores. As an example, the average score was only 38 for the most important argument (criticism of inadequacies in processor's product or service), with 57 percent of the firms indicating that this argument was of little importance. At the other end of the spectrum, 43 percent of the firms indicated the argument was highly important.

RESPONDENTS' ATTITUDES TOWARD THE MILK MARKETING SYSTEM

State Milk Control Laws

Twenty States and Puerto Rico had milk control laws and were actively regulating dairy product prices in mid-1968. ^{12/} In the North Central Region, however, only two States--North Dakota and South Dakota--had State milk control laws (app. table 19). These laws set minimum resale prices for fluid milk at both the wholesale and retail levels.

Dairy Trade Practice Regulations

Ten States without milk control laws in mid-1968 had laws restricting sales below cost or regulating trade practices in milk distribution. Six of these States--Iowa, Kentucky, Minnesota, Missouri, Nebraska, and Wisconsin--were in the area under study.

^{12/} U. S. Department of Agriculture, Dairy Situation, Econ. Res. Serv. DS-323, Nov. 1968, p. 33.

Only representatives of firms in States with dairy trade practice regulations were asked to evaluate the effects of such regulations on food distribution operations. The headquarters (decisionmaking units) of 67 of the 183 food distributors without fluid milk plants were located in States with dairy trade practice regulations. However, an additional 16 firms not located in such States responded to this section of the questionnaire because a large proportion of owned or affiliated stores were located in States with these regulations.

Respondents felt that dairy trade practice regulations were most effective in limiting price reductions obtainable from processors and in prohibiting effective merchandising practices such as tie-in sales (app. table 20). The majority of respondents did not feel that these regulations made it difficult to obtain useful services from processors.

Large firms and firms with a high percentage of their stores utilizing their milk programs tended to agree with the statement that dairy trade practice regulations prohibited effective merchandising practices such as tie-in sales. Corporate firms tended to agree more strongly than voluntary or cooperative firms that such regulations increased store profits on milk. No significant differences were found in the rankings of other groups of firms pertaining to effects of dairy trade practice regulations.

All firms agreed fairly closely on the effects of dairy trade practice regulations on their firms. Respondents from firms with plants placed most emphasis on these regulations prohibiting effective merchandising practices such as tie-in sales, while those from firms without plants emphasized the limitations on price reductions obtainable from processors.

All 183 representatives of food chains without plants were asked to give their reactions to dairy trade practice regulations which prohibit sales below cost, price discrimination, interest-free loans, free equipment, and the like, whether or not the food chain owned or served affiliated stores in States with such regulations (app. table 21).

Although considerable variation existed among respondents, most of those expressing an opinion tended to agree with the statement that dairy trade practice regulation was most beneficial to milk processors. In this regard, 11 percent of the respondents strongly disagreed with the statement, 30 percent were uncertain or had no opinion, and 30 percent strongly agreed.

Two statements with which respondents tended to disagree were that dairy trade practice regulation was in their own firm's interest and that such regulations had led to increased sales of milk on home delivery routes. In the first instance, there was a trimodal distribution of respondents' scores, with about one-fifth of the respondents tending to strongly disagree with the statement, about one-fifth being uncertain or having no opinion, and about one-fifth tending to strongly agree.

Respondents in States with dairy trade practice regulations tended to agree that such regulation was effective. These same respondents generally disagreed that such regulations had led to increased sales of milk on home

delivery routes. Local firms tended to agree that these regulations had eliminated objectionable practices in milk marketing, but national and regional firms strongly disagreed with this statement. Again, variation in scoring by individuals within groups was relatively high.

Respondents representing the 13 firms operating fluid milk plants, whether or not the firms distributed milk in States with dairy trade practice regulations, were asked to give their opinions of this type of legislation (app. table 22). In general, considerable differences existed in the attitudes of respondents of food chains with plants and those of food chains without plants toward dairy trade practice regulations. Representatives of firms with plants were staunchly convinced that these regulations were injurious to consumers and that they were not in the best interest of the dairy industry. Representatives of both groups agreed that these regulations were most beneficial to milk processors and not to their own firms. Respondents of food chains with plants seemed more critical of these regulations than respondents of firms without plants.

Food Chains' Image of Milk Processors

Representatives of food chains without plants felt that fluid milk processors had little to gain by establishing their own dairy stores (app. table 23). They tended to agree that processors had readily adjusted their marketing practices to chains' buying policies and that small processors could not serve supermarket chains satisfactorily.

Respondents disagreed far more strongly with the statement that processors could not process milk for supermarkets as efficiently as food chains than they did with the statement that processors could not deliver milk to supermarkets as efficiently as food chains. While 37 percent of the respondents strongly disagreed with this latter statement, 15 percent strongly agreed with it. This strong agreement by a segment of retailers implies that some felt they could deliver milk from the plant dock to their stores as efficiently or more so than processors. In general, then, it is implied that processors were in a relatively stronger position in the processing phase than in delivery of packaged milk.

Respondents generally expressed less disagreement with statements that processors too strongly resisted packaging private label brands of milk, that they had been slow to adjust delivery services to the needs of supermarkets, and that they had been slow to provide limited service delivery to supermarkets. Here too, however, one must be cautious in evaluating average or most common attitudes. Despite the overall disagreement with the above statements, 18 percent strongly agreed with the second statement, and 11 percent strongly agreed with the third. Thus, despite the generally favorable attitude of food chains without plants concerning the performance of processors, a sizable group of respondents felt that processors could improve considerably, especially in the area of services and merchandising programs.

The group of services associated with moving milk from the plant dock into the supermarket dairy case seemed to be the most dynamic and changing area at the time of the survey. Furthermore, both chains and processors seemed to lack understanding and knowledge about the optimal arrangements for performing these functions.

It is difficult to ascertain the reasons for the lack of response of fluid milk processors to the needs of food chains. Did fluid milk processors understand the service needs of food chains? Did they know the actual cost of providing private label brands compared with the cost of providing processor brands? Were institutional constraints involved? Or was the lack of response merely part of fluid milk processors' bargaining strategy? No ready answers are available.

Respondents in States with dairy trade practice regulations tended to disagree more strongly than those in States without them with the statements that many processors had tried to prevent the shift from home delivery to store sales of milk; that processors had been slow to adjust delivery services to the needs of supermarkets; and that they too strongly resisted packaging private label brands for food chains.

Respondents of firms that had private label brands tended to agree more strongly than those without these brands with the statements that processors had done a poor job of promoting milk; that processors had been slow to adjust delivery services to the needs of supermarkets; and that processors should have their own dairy stores as major outlets for their milk.

Voluntary and cooperative respondents felt more strongly than executives of corporate chains that processors resisted granting as large discounts as were justifiable on private label milk and that they competed too aggressively for the accounts of supermarket chains.

Such variables as percentage of stores in the central milk program, radius of area served, and size of firm seemed to have little effect on the opinions of food retailers about the conduct and performance of milk processors.

Considerable differences existed between the average scores of respondents representing food chains with plants and those without plants concerning various statements pertaining to the conduct and performance of processors (table 12). Considering only the average scores of the two groups, food chains with plants were much more critical of the conduct and performance of processors than food chains without plants. This finding could be expected, since food chains with plants had elected to integrate vertically backward into milk processing and had chosen to perform the functions previously performed by processors. This supports the hypothesis that, had processors been less hesitant to make adjustments prior to integration on the part of food chains, the extent of backward integration in the marketing channel would have been less than it was at the time of this study.

Both groups--on the average--agreed, both as to score and sign of the score, in disagreeing with the statement that processors too strongly

Table 12.--Average scores assigned by 13 firms with fluid milk processing plants and 183 firms without plants to "reactions about fluid milk processors," North Central Region and Kentucky, 1968-69 1/

Reactions <u>2/</u>	Firms with plants	Firms without plants
	<u>Score</u>	
Many fluid milk processors have tried to prevent the shift from home delivery to store sales of milk	63	-6
Fluid milk processors have done a poor job in promoting milk	39	-22
Fluid milk processors have been slow to adjust delivery services to the needs of supermarkets	39	-25
Fluid milk processors resist granting as large discounts as are justifiable on private label milk	26	-3
Fluid milk processors have been slow to provide limited service delivery to supermarkets	23	-24
Fluid milk processors have little to gain by establishing their own dairy stores	16	43
Fluid milk processors can process milk for supermarkets as efficiently as food chains can do it in their own plants	14	45
Small fluid milk processors generally can serve supermarket chains satisfactorily	9	-15
Fluid milk processors compete too aggressively for the accounts of supermarket chains	1	-15
Fluid milk processors have readily adjusted their marketing practices to the buying policies of food chains	-6	27
Fluid milk processors should have their own dairy stores as major outlets for their milk	-19	-74
Fluid milk processors can deliver milk to supermarkets as efficiently as food chains can do it	-26	24
Fluid milk processors too strongly resist packaging private label brands of milk for food chains	-26	-36

1/ Scores of respondents were based on a scale ranging from -99 (strongly disagree) through 0 (uncertain or no opinion) to 99 (strongly agree).

2/ Reactions are arranged according to rank of mean score of firms with plants.

resisted packaging private label brands of milk for food chains, and in agreeing that processors had little to gain by establishing their own dairy stores.

Respondents of the two groups largely disagreed on the statements that: (1) processors had been slow to adjust delivery services to the needs of supermarkets; (2) processors resisted granting as large discounts as were justifiable on private label milk; and (3) processors had been slow to provide limited service delivery to supermarkets. Firms with plants tended to agree with these statements, while firms without plants tended to disagree.

When considering the generally more favorable image of processors in the eyes of food chains without plants, however, remember that the comparison is in terms of average scores of all respondents in the two groups. As stated above, a number of firms without plants agreed quite strongly with the above three statements and felt that considerable adjustment was still needed on the part of processors in fulfilling their needs.

On the average, both groups of firms felt that processors could process milk for supermarkets as efficiently as food chains could. However, firms with plants gave this statement an average score of 14, compared with an average score of 45 given by firms without plants. In another question related to vertical integration, firms with plants disagreed (-26) and firms without plants agreed (24) that processors could deliver milk to supermarkets as efficiently as food chains could. This indicates that some food chains with plants felt they had a comparative advantage over processors in milk delivery.

A number of representatives of food chains without plants were concerned about their milk cost compared with that for chains with plants. They seemed concerned about the possible advantage their competitors were obtaining through vertical coordination and especially through doing their own processing.

Food Chains' Image of Wholesale Milk Drivers and Their Unions

A number of respondents expressed a desire for more limited services from processors and conveyed the attitude that many processors had not adjusted their services accordingly. The question arose, then, as to what extent the adjustment process had been hampered by the practices of wholesale milk drivers and their unions.

Many respondents tended to disagree with the statements that full service delivery of milk by wholesale milk drivers was needed by supermarket chains; that drivers' unions readily adapted driver pay plans to changing delivery situations; that drivers ought to service the milk cases in supermarkets; that drivers needed to be salesmen; and that drivers should be paid on commission (app. table 25). Firms that owned or serviced stores over a wide area were less inclined to indicate that milk drivers' unions served a useful purpose and that members of drivers' unions gave better service than truckers who picked up milk at the plant dock. This reflects the general attitude of such food chains that, in some situations, milk could be distributed more efficiently through the retail chain's own warehouse or grocery delivery system

than by direct delivery to the stores from the processing plant. Some respondents indicated that flexibility in the delivery system had been hampered by drivers' union contracts.

Respondents of all firms agreed, on the average, on all 12 statements presented. However, firms with plants tended to score considerably higher than firms without plants. The former revealed stronger convictions about unions and their union than firms without plants.

Firms with plants felt much more strongly (an average score of 71) than firms without plants (an average score of 19) that union milk drivers were paid more for delivering milk than most other truckers were paid for similar services (table 13). At the other end of the spectrum, firms with plants gave a more negative response to statements than firms without plants.

Table 13.--Average scores assigned by 13 firms with fluid milk processing plants and 183 firms without plants to "reactions about wholesale milk drivers' unions, Central Region and Kentucky, 1968-69 ^{1/}

Statement ^{2/}	Firms with plants	Firms without plants
	Score	
Members of wholesale milk drivers' unions are paid more for delivering milk than most other truckers are paid for similar services	71	19
Most unionized wholesale milk drivers give good service to food stores	61	33
Wholesale milk drivers' earnings in your area are too high..	43	19
Wholesale milk drivers' union contracts impede efficient delivery of milk to supermarkets	27	19
Milk drivers' unions have no concern about preserving the business of present milk bottlers	23	
Milk drivers' unions serve a useful purpose	12	
Members of wholesale milk drivers' unions give better service than truckers who pick up milk at the plant dock..	-14	-19
Wholesale milk drivers need to be salesmen	-37	-19
Wholesale milk drivers ought to service the milk cases in supermarkets	-41	-19
Wholesale milk drivers should be paid on a commission basis.	-56	-19
Wholesale milk drivers' unions readily adapt driver pay plans to changing delivery situations	-69	-29
Full service delivery of milk by wholesale milk drivers is needed by supermarket chains	-79	-39

^{1/} Scores of respondents were based on a scale ranging from -99 (strongly disagree) through 0 (uncertain or no opinion) to 99 (strongly agree).

^{2/} Statements are arranged according to rank of mean score of firms with plants.

These findings support the frequent contention that the practices of wholesale milk drivers and their unions have hindered processor's adjustments to chains' needs and have encouraged food chains to integrate into fluid milk processing.

Views of Chains With Plants on Milk Bargaining Cooperatives

Except when they used supplemental milk supplies, food chains that had integrated backward into processing were performing the functions that had previously been performed by processors. Thus, food chains found themselves negotiating with cooperatives for raw milk rather than with processors for packaged milk.

Concurrent with this negotiating arrangement, milk cooperatives have merged or federated into larger units that can offer full supply contracts and surplus milk disposal services to processors--including chains with plants.

Respondents of food chains with processing plants felt, by a wide margin, that cooperatives provided needed surplus milk disposal facilities and were successful organizations (table 14). They also felt that cooperatives served a useful purpose, improved returns to producers, were dependable organizations, and lived up to agreements with processors.

Respondents expressed considerable feeling that cooperatives had more influence than they should have on Federal order provisions and decisions and that they often made unreasonable demands on processors. However, when the overall picture is considered, the image of cooperatives in the eyes of representatives of food chains that had integrated into processing appeared to be quite favorable.

These reactions, together with additional information obtained in personal interviews, supported the hypothesis that integration into processing by food chains is more feasible in markets where producer cooperatives provide raw milk procurement and surplus disposal services than in markets where these services are not provided by cooperatives. These services were available in most markets at the time of the survey. However, in the not-too-distant past, it was a common practice for individual processors to have raw milk procurement programs. Thus, one of the barriers to entering the fluid milk processing industry appears to have diminished in recent years with easier access to raw milk supplies.

Forces Influencing Integration by Food Chains

A conceptual framework for classifying the forces that may affect chain executives' decisions concerning backward vertical integration in milk marketing channels is outlined in appendix table 2. Much of the theoretical literature points out that firms integrate vertically because it is profitable for them to do so. But the question arises as to when the profits are expected to accrue--in the short run or the long run? Thus, it was assumed

Table 14.--Mean scores and relative frequency of scores assigned to "reactions about fluid milk bargaining cooperatives" by 12 North Central food chains with fluid milk plants, 1968-69 1/

Statement <u>2/</u>	Extent of agreement or disagreement with statement:					
	Mean score	Relative frequency of scores <u>3/</u>				
		-99 to -70	-69 to -1	0	-1 to 69	70 to 99
The cooperative provides needed surplus disposal services	82	0	0	0	17	83
The cooperative is a successful organization ..	76	0	0	0	25	75
The cooperative serves a useful purpose	73	0	0	0	33	67
The cooperative lives up to its agreements with processors	70	8	0	0	17	75
The cooperative is a dependable organization ..	68	0	0	8	25	67
The cooperative improves returns to producers..	66	0	0	8	50	42
The cooperative provides needed procurement services for processors	61	0	8	9	25	58
The cooperative and milk processors in your market agree on most important issues	50	0	8	9	33	50
The cooperative has more influence than it should have upon Federal order provisions and decisions	46	9	17	8	8	58
The cooperative often makes unreasonable demands of processors	38	17	0	16	25	42
The cooperative benefits processors as well as producers	36	16	0	0	42	42
A sizable minority of producers (say 20 to 30 percent) should not belong to the cooperative	1	0	25	58	8	9
Members of the cooperative are not unified in their support of the organization	-5	17	16	33	17	17
The cooperative can exist only because it is exempt from paying income taxes	-36	42	33	9	8	8
The cooperative is poorly organized and does not know where it is going	-49	50	17	25	8	0
The cooperative has no real concern about the welfare of processors	-66	67	33	0	0	0

1/ Scores of respondents were based on a scale ranging from -99 (strongly disagree) through 0 (uncertain or no opinion) to 99 (strongly agree).

2/ Statements are arranged according to rank of mean score.

3/ Total frequency equals 100.

that each firm or system of firms operating within a dynamic market structure will choose that course of action which it expects will optimize profits or minimize losses within its chosen time horizon. Similarly, in a bilateral oligopoly bargaining situation, a firm or a system of firms affected by ensuing events will alter its course of action so that, within its planning horizon, expected profits will be maximized or expected losses minimized.

The latter assumption may have caused the reluctance of processors to package private label milk for food chains in the early stages of private label development. In this type of competitive situation, crucial decisions must be made by individual processing firms at various stages of private label development concerning the strategy they should use to maintain or enhance their relative market position--again considering some strategic time horizon.

The characteristics of individual markets and of individual firms at any point in time are the result of past, present, and anticipated stimuli and constraints. This is especially true when firms are operating within an oligopolistic market structure--the situation which generally exists in the food chain and fluid milk processing environment. This phenomenon is vividly pointed out by Harris in his detailed study of price wars. ^{13/}

Much of the bargaining between food chains and processors over terms of trade has evolved around the services associated with the movement of packaged milk from the plant dock to the dairy cases of food chains' supermarkets. Two important areas are open for negotiation: (1) who is to perform the services; and (2) the price of a certain volume of milk and the associated group of services.

Relative Cost

Under consideration here is the relative cost of performing a set of functions by a food chain under a vertically integrated system compared with purchasing the same product and group of services in the open market.

Many food chains preferred to perform more of the delivery services if processors would grant price concessions. A food chain can take on a number of functions backward in the marketing channel without incurring substantial additional fixed costs. Centralized buying and billing for a group of stores, initiating a private label brand, and servicing the supermarket dairy case are examples. Excess capacity in a food chain's delivery system may well be used for picking up milk at a plant dock and delivering it to stores along with other perishable products. Similarly, excess capacity in a food chain's warehouse might be converted to a storage area for packaged fluid milk and negotiations made with a processor to deliver milk to the chain's warehouse rather than to individual supermarkets.

^{13/} Edmond S. Harris, Price Wars in City Milk Markets, U.S. Dept. Agr., Agr. Econ. Rpt. No. 100, Oct. 1966, pp. 6-14.

The costs associated with performing delivery functions are often relatively fixed in the short run so far as processors are concerned. In other words, the contraction process appears to be relatively rigid for processors, but the expansion process for food chains tends to be relatively flexible--even after the decision has been made to perform many of the additional functions. In many instances, the food chain does not lock in fixed costs in various stages of the vertical integration process until the decision is made to buy or build a processing plant. However, once this decision is made, sizable fixed costs are involved and the potential advantages of flexibility are diminished.

In general, better utilization of food chains' existing resources or slight additions thereto can give food chains a comparative advantage over processors in delivery functions. In some instances, food chains can gain better control of product flow by internal coordination of some service functions. A food chain employee stocking the dairy case is an example. While performing other functions near the dairy case, he probably can better observe the needs of the dairy case throughout the day than a milk deliveryman who, during a single visit, tries to anticipate day-to-day needs.

Lack of pricing efficiency and communication efficiency were two areas that seemed to encourage food chains to assume more of the service and merchandising functions. This was especially true for food chains with plants.

If food chains decide to integrate and substitute internal organization for market exchange, is this evidence that the market has failed? Coase's paper on "The Nature of the Firm" gives some insight into costs of using the price mechanism. ^{14/} More recent contributions by Williamson and Arrow also compare and contrast the relative costs of market versus nonmarket allocation. ^{15/}

It is generally recognized that--except under the theoretical model of perfect competition--market transactions in the real world are not costless. Costs are involved in the sales or purchasing contact; keeping up with market conditions; and negotiating terms of trade. Costs are also associated with risk and uncertainty. The food chain may be concerned as to whether the costs of performing certain functions by internal coordination are less than can be achieved through the traditional market system. However, even if it is less costly to perform certain functions internally, it is questionable whether one can conclude that this is entirely due to "transactional failure." ^{16/}

^{14/} R. H. Coase, *The Nature of the Firm*, *Economica* IV, pp. 386-405, 1937.

^{15/} Oliver E. Williamson, *The Vertical Integration of Production--Market Failure Considerations*, *The Amer. Econ. Rev.* LXI (2): 112-123, May 1971, and Kenneth J. Arrow, *The Organization of Economic Activity: Issues Pertinent to the Choice of Market Versus Nonmarket Allocation*, in *The Analysis and Evaluation of Public Expenditures: The PPB System*, vol. 1, Joint Economic Committee, Washington, D. C., pp. 47-64, 1969.

^{16/} Williamson, footnote 15.

Some of the differential cost advantage of internal coordination versus market transactions may be due to imperfections in the market system, but some appears to be due to inherent economies of scale in internal coordination. For example, it is probably less costly for one executive at the division level of a food chain to become knowledgeable about the price structure of fluid milk and the alternative groups of services that may be associated than it would be for numerous managers of individual supermarkets to attain this same level of proficiency. In other words, some marketing functions may be performed more efficiently by internal specialization and coordination than by the autonomy of the open market price mechanism.

Survival or Growth

Food chains may adopt various forms of internal coordination to remain competitive or as a way of gaining a comparative advantage over other firms. In any event, survival is an inherent motive of most business organizations and can be a strong force in fostering organizational innovation.

Horizontal growth of some food chains--especially the larger firms--has been impeded by rulings of the Federal Trade Commission and the courts. Thus, internal growth through vertical integration into fluid milk processing may be an alternative to horizontal growth. Food chains' usual practice of building their own plants rather than purchasing existing facilities may be caused by a desire to ward off potential repercussions.

This raises a question as to whether legal and institutional pressure for internal growth is always in the public interest. If, in fact, encouragement of internal growth of vertical market structures leads to excess milk processing capacity, there may be some negative effects from a public welfare point of view. As Babb points out:

From a social standpoint, the adjustments taking place in processing and distribution are difficult to evaluate. Assuming limited gains from economies of size in fewer and larger plants, increases in net social product depend upon uses made of resources leaving the industry. In many cases, the uses of equipment and plant facilities are limited. 17/

In a dynamic marketing system, it is socially desirable that outdated plant capacity be replaced by new technology, more efficient plants, and viable organizational systems. A key question appears to be whether archaic plant capacity is being forced out of the system--either as a direct or indirect consequence of food chains' building their own plants--or whether relatively efficient plant capacity is being duplicated. To the extent that the latter case is true, there may be adverse effects on the competitive environment, and in turn, on society.

17/ Emerson M. Babb, Changing Marketing Patterns and Competition for Fluid Milk, Jour. Farm Econ. 48 (3) part II: 61, Aug. 1966.

Market Power

Over the years, market power has noticeably shifted from processors to food chains, including voluntary and cooperative food wholesalers. Centralized buying of milk by the district or regional office of a food chain for a group of stores enhances food chains' relative market power. Food chains' access to consumers, control of the shelf space from which consumers make food selections, initiation of private label brands, and the sheer size of centralized food chain accounts, all appear to give additional market power to food chains with central milk programs over processors and food chains without these programs.

In most instances, the core of central milk programs centers around the development or potential development of private label brands. Therein lies much of the bargaining power that food chains have obtained from centralized buying and merchandising programs.

Except for the few firms that operated milk plants, private labeling of fluid milk by food chains in the North Central Region and Kentucky was a development of the fifties and sixties (see pp.17-19). Pressures for private labeling seemed to originate at various decisionmaking points within the marketing system. In some instances, it originated at the retail level; in others, at the wholesale level; and in still others, at the processor level.

Food retailers were strongly motivated to initiate private label brands and thereby have a product that could be differentiated from well-established processor brands. This gave retailers more freedom in pricing and merchandising policies. Pricing and merchandising strategy could then be employed with less danger of initiating marketwide price wars or upsetting established milk price structures. However, once a firm or market merchandises a large proportion under private label, both pricing and merchandising strategies are likely to change.

At the wholesale level, voluntary and cooperative groups seemed to be interested in fitting private label milk into their overall programs. These firms could offer their member stores a centralized milk buying and merchandising program and reap the associated goodwill and pecuniary benefits.

According to respondents, most processors tended to resist private label development in its initial stages. However, once a sizable portion of the market was merchandising private label brands, these same processors often offered to package private label milk to obtain new accounts or hold the food chain accounts they already had.

Since private label merchandising generally enhances the market power of food chains, the decision as to when a processor should concede to private label packaging or even promote private label development is crucial. Profit-maximizing and loss-minimizing strategies of processors under conditions of risk and uncertainty evolve and change over time. This undoubtedly explains much of processors' change in attitude toward private labeling. This changing strategy probably results from processors attempting to find a niche in the existing or evolving marketing system.

Associated with private label development is the increased risk inherent in serving large food chain accounts. Once a sizable proportion of food chains' business is private label, they are in an advantageous position to change suppliers of private label milk or to vertically integrate further into fluid milk processing without consumers even being aware of the change, much less reacting negatively. This increases the risk to processors interested in supplying these accounts and is a cost that must be borne by the fluid milk marketing system. Food chains avoid this risk element when they integrate into processing, thereby realizing another cost advantage of internal coordination compared with the open market system.

Legal and Institutional Environment

Various laws, regulatory agencies, and bargaining groups (app. table 2) are part of the business environment in which chains and processors operate. They act as constraints in varying degrees on all participants, and can affect the market structure, conduct, and performance of the marketing system. These external factors can also differentially affect the bargaining power of different types and sizes of chains and processors.

As Harris points out, "In each city milk market, firms are too few in number for milk prices to be established as an automatic response to an impersonal market mechanism." ^{18/} Because of the structure of milk markets, traditional firm conduct, and the nutritional importance of milk to society, the milk industry has been strictly regulated by local and State health ordinances, Federal milk marketing orders, State milk control laws, dairy trade practice regulations, and antitrust laws. In addition, labor unions, trade associations, and dairy farmer cooperatives are part of the institutional environment which influences the conduct of firms operating in milk marketing channels.

Some food chain executives questioned whether fluid milk warranted all the regulatory attention that it was receiving. They felt that, given the refrigeration and transportation facilities available today, milk was less difficult to merchandise and caused fewer problems than a number of other perishable products they offered consumers.

In recent years, producer cooperatives have achieved substantial bargaining power and have succeeded in negotiating sizable price premiums above minimum prices established by Federal orders. As previously indicated, some respondents of food chains with plants felt that cooperatives had more influence than they should have upon Federal order provisions and decisions and that they often made unreasonable demands on processors. One food chain executive indicated that there were no negotiations between the firm he represented and the cooperative over terms of trade on raw milk needs. The cooperative simply stipulated what the price of milk and the associated group of services would be. The respondent pointed out that, given the power of producer cooperatives and the rising cost of milk, it may be advantageous for the food chain to process and merchandise fluid milk substitutes at some future time.

^{18/} Harris, p. iv. See footnote 13.

Another alternative that may be open to food chains operating processing plants is further integration backward into milk production at the farm level. With this degree of vertical integration, the marketing channel would be shortened to the point where internal coordination would be taking place from the point of raw milk production to the consumer. All traditional transaction points would be bypassed. Given the current structure of farm production, however, it seems unlikely that food chains would get into milk production in a significant way.

ADJUSTMENTS AND POLICY IMPLICATIONS

The extent to which food chains have adopted central milk programs which represent various degrees of vertical coordination has been pointed out. Adjustments that undoubtedly have resulted because of the forces encouraging backward vertical integration in milk marketing channels by food chains are: (1) a general trend toward centralized buying and merchandising of milk; (2) adoption of limited service delivery, with food chains performing more of the services in the marketing channel that traditionally were performed by processors; (3) more emphasis on price competition at the processor-food chain level of negotiations; (4) more attention being paid to separating out the cost of fluid milk itself from the associated group of services at various stages in the channel; (5) initiation of private label brands; and (6) full integration into processing by food chains.

The impact of structural change associated with central milk programs potentially affects food retailing or wholesaling firms, processors, dairy farmers, and consumers. The most immediate impact seems to generally fall on food retailing or wholesaling firms and processors.

Food Retailing and Wholesaling Firms

The economies associated with central milk programs are likely to hasten the decline in the proportion of retail milk sales (as well as total retail food sales) going through unaffiliated independent retail food stores. These programs may also exert increased pressure on voluntary and cooperative group wholesalers to serve only the larger, more efficient stores and supermarkets.

Much of the future success of affiliated independent stores probably will be determined by the quality of management at the group wholesaler level and the extent to which member stores can compete with stores and supermarkets operated by corporate food chains. An efficiently operated central milk program may be another means of keeping the voluntary and cooperative group system viable.

If there are economies in more complete forms of vertical integration, this source of potential profits could be used to decrease the price of milk to consumers--direct price competition with competitors. These profits could alternatively be used to reduce prices of other items in the store as a potentially more effective means of competition, or they could be returned to proprietors or stockholders of the firm in the form of dividends. In

conglomerate firms, this phenomenon could be extended even further--to subsidize growth in entirely unrelated industries. ^{19/} The vigor of competition would have an important bearing on distribution or use of the savings.

Fluid Milk Processors

The smaller independent processors generally have been foreclosed from providing food chains with central milk programs, especially in programs where private label brands were extensively merchandised. Centralized milk programs have increased the size of fluid milk accounts and thus have increased the associated risk. An all-or-nothing bargaining situation generally exists. The larger fluid milk processors are in a better position to assume this risk than the smaller firms. In turn, even the largest national or regional processors may be at a competitive disadvantage in dealing with the larger food chains that potentially can integrate into fluid milk processing and thereby avoid this type of risk.

The extent to which the national and regional processors can maintain the food chain market for milk is open to question. Competitive conditions among food chains that force innovation and the extent to which processors adapt their operations--especially their distributing and merchandising systems--to the changing needs of food chains will undoubtedly influence the fate of these processors.

Processors have not been entirely unconstrained in making adjustment decisions. Wholesale milk drivers' unions, for example, evidently have had much to say about the extent and rate at which processors have been able to adjust their operations to changing needs of the marketing system.

Dairy Farmers

The proportion of milk sold through retail stores most likely will continue to increase. Central milk programs--especially complete vertical integration into milk processing by food chains--appear to be an evolutionary process which shortens the marketing channel. Given these trends, dairy farmer bargaining cooperatives will increasingly find themselves negotiating terms of trade directly with food chains rather than processors. This raises the question as to whether producer cooperatives--and in turn their producer members--could more readily achieve their goals by bargaining directly with food chains. There may be some advantages in doing so. However, questions of relative bargaining strength and who is to control the marketing channel have implications as to where milk most likely will be produced, by whom, and for what price.

^{19/} These alternatives associated with "pricing the mix" in food stores point up the difficulty in analyzing the performance of fluid milk marketing systems under alternative means of coordination.

Consumers

Centralized milk programs appear to have improved the operational efficiency of the marketing system. But the extent to which savings have been and are likely to be passed on to consumers is beyond the scope of this study. Numerous questions could be raised about the likely performance of the marketing system under alternative degrees of vertical coordination. Until these areas are explored, wise choices of alternative policy modifications will be difficult to make.

Probable Adjustments by Food Chains

Many forces affect the decisions of food chain entrepreneurs concerning vertical integration of the milk marketing system. The combination of forces, their magnitude, and their impact will continue to change--especially as food chains integrate their operations in varying degrees.

Given the interacting nature of the adjustment process, it is difficult to predict what adjustments labor unions will make over time; what adjustments and compromises processors will make; and what the innovative and competitive conditions in the retail food industry will be. In addition, even though regulatory agencies have specific laws and regulations to enforce, there exists considerable latitude as to how they are interpreted and the degree to which they are enforced.

Initiation of central milk programs has undoubtedly conditioned and changed the conduct of processors who sell to food stores not associated with these programs. As programs have been initiated and developed by some food chains, this market has been closed to numerous processors. In turn, these processors have been forced to look for new accounts and the level of competition or rivalry among processors very likely has increased. This phenomenon undoubtedly has given other food chains without central programs more alternative sources of supply, reducing the incentive for them to initiate central milk programs of their own and influencing the extent of participation in the programs offered by voluntary and cooperative group wholesalers.

Despite these interacting forces, considerable pressure most likely will continue for vertical integration of the fluid milk marketing system by food chains.

Further Implications for Policy

Results of the study indicate that, since fluid milk is a relatively homogeneous product, the trend toward centralized buying of milk and toward fewer brands of milk in stores improves operational efficiency. These trends, however, in conjunction with vertical integration into fluid milk processing by food chains, tend to deny an important segment of the milk market to processors--especially the smaller independent firms. In addition, competitive relations among large vertically coordinated milk processing and distribution systems differ fundamentally from historical patterns of milk marketing. This

poses a dilemma for both society and those responsible for formulating policy--should firm effects or market effects be the overriding criteria for policy?

A problem posed by policy modification is that the impact is not likely to be mutually beneficial to all parties within the marketing channel or to the parties at the ends of the channel--producers and consumers. In most instances, a compromise in solutions is objectively called for. However, in some instances, the relative bargaining strength of interested parties appears to have influenced the policy alternatives chosen. Some State milk control laws and dairy trade practice regulations appear to fall in this category.

When one thinks of policy modification he must ask at which level--Federal, State, or local--the policy decisions are being made and what agency is responsible for policymaking and enforcement at the respective levels. In addition, there is always the potential of new legislation as a policymaking influence.

Because society may request policymakers to initiate policy modifications that could affect structure or behavior in dairy marketing, policymakers should be aware of the extent of interdependence within the system. Questions of both longrun and shortrun implications of alternative policy decisions also come to the fore. Policies of regulatory agencies intended to decrease the comparative disadvantage of small firms, for example, may help change the structure or conduct of the industry to the longrun actual disadvantage of the smaller firms. Some of the legal and institutional forces encouraging vertically integrated marketing systems appear to be of this type.

Policymakers must consider this structural change resulting from backward vertical integration, the forces encouraging it, and the impact these structural characteristics potentially can have on future structure, conduct, and performance of production and marketing systems. This opens a wide field for future research and challenges researchers to bridge the gap between economic theories of the firm and behavioral and organizational theories to gain a better insight into the intricacies of the overall fluid milk marketing system.

APPENDIX.--SUPPLEMENTAL TABLES

pendix table 1.--U. S. grocery store sales, by type of operation, selected years

Type of operation	Total grocery store sales			
	1954	1959	1964	1969
	<u>-----Million dollars-----</u>			
Chain stores.....	13,385	18,625	25,600	38,125
Voluntary & cooperative group stores.....	13,200	23,650	29,800	37,400
Independent stores <u>1</u> /.....	10,275	7,200	6,200	6,680
Total.....	36,860	49,475	61,600	82,205
	<u>-----Percent-----</u>			
Chain stores.....	36.3	37.6	41.5	46.4
Voluntary & cooperative group stores.....	35.8	47.8	48.4	45.5
Independent stores <u>1</u> /.....	27.9	14.6	10.1	8.1
Total.....	100.0	100.0	100.0	100.0

1/ Firms with fewer than 11 stores that were not affiliated with either a voluntary or cooperative group.

Source: 37th Annual Report of the Grocery Industry, Progressive Grocer, New York, Apr. 1970, p.54.

Appendix table 2.--Forces that may affect the degree of vertical integration within fluid milk marketing channels by food chains

1. Relative cost (economies of vertical integration vs. open market price system)
 - A. Physical efficiency
 - (a) Economies of size
 - (b) Better utilization of existing factors (land, labor, capital, and entrepreneurship)
 - (c) Better control of product flow and variability in supply
 - (d) Technological change
 - B. Pricing efficiency
 - C. Communication efficiency
2. Survival or growth (vertical growth vs. horizontal or conglomerate growth)
 - A. Competitive strategy
 - B. Financial resources
 - C. Investment decisions
 - D. Management expertise and knowledge of the industry
 - E. Existing excess capacity
 - (a) Production facilities
 - (b) Distribution facilities
 - (c) Computer facilities
3. Market power
 - A. Intrafirm coordination
 - (a) Degree of decisionmaking autonomy
 - (b) Product differentiation
 - (c) Pricing and merchandising strategy (including private labeling)
 - (d) Quality control
 - B. Interfirm coordination
 - (a) Size of firm
 - (b) Form of organization (voluntary group, cooperative group, corporate chain)
 - (c) Type of organization (national or regional, vs. local)
 - (d) Market share
 - (e) Pricing risk
 - (f) Specification risk
 - (g) Access to consumers
 - (h) Guaranteed market
 - (i) Relative bargaining power
 - (j) Alternative wage structures
4. Legal and institutional environment (various laws, regulatory agencies, and bargaining groups)
 - A. Federal milk marketing orders
 - B. State milk control laws
 - C. Dairy trade practice regulations
 - D. Federal Trade Commission
 - E. Justice Department
 - F. Health departments
 - G. Trade associations
 - H. Fluid milk processors
 - I. Labor unions
 - J. Dairy farmer cooperatives

Appendix table 3.--Size distribution of 245 firms in the North Central Region and Kentucky that had central milk programs but no milk plants, by type of firm, 1968-69 1/

Number of supermarket equivalents <u>2/</u> by type of firm	Firms					
	Interviewed		Not interviewed		Total population	
	Number	Percent	Number	Percent	Number	Percent
Corporate firms:						
4-5	23	21	9	18	32	20
6-9	34	30	10	21	44	27
10-19	17	15	12	25	29	18
20-29	8	7	4	8	12	7
30-49	12	11	2	4	14	9
50-69	7	6	5	10	12	7
70-99	7	6	6	12	13	8
100-150	1	1	0	0	1	1
Over 150	3	3	1	2	4	3
Subtotal	112	100	49	100	161	100
Mean	29		30		29	
Voluntary and cooperative group wholesalers:						
4-5	1	1	1	8	2	2
6-9	2	3	0	0	2	2
10-19	2	3	0	0	2	2
20-29	3	4	1	8	4	5
30-49	6	8	1	8	7	9
50-69	15	21	4	30	19	23
70-99	14	20	3	23	17	20
100-150	19	27	1	8	20	24
Over 150	9	13	2	15	11	13
Subtotal	71	100	13	100	84	100
Mean	101		88		99	
All firms:						
4-5	24	13	10	16	34	14
6-9	36	20	10	16	46	19
10-19	19	10	12	20	31	13
20-29	11	6	5	8	16	6
30-49	18	10	3	5	21	8
50-69	22	12	9	14	31	13
70-99	21	11	9	14	30	12
100-150	20	11	1	2	21	9
Over 150	12	7	3	5	15	6
Total	183	100	62	100	245	100
Mean	57		42		53	

1/ Firms that had 4 or more supermarkets or 10 or more grocery stores.

2/ 1 supermarket or 2 other stores.

fix table 4.--Extent and characteristics of centralized milk programs of North Central and Kentucky food distributors 1/ without fluid milk processing plants, 1968-69

Type of milk program	Corporate chains	Voluntary & cooperative chains	All chains
	----- <u>Number</u> -----		
lk program	161	84	245
plier's milk program	34	0	34
k program	39	120	159
l	234	204	438
	----- <u>Percent</u> -----		
lk program	69	41	56
plier's milk program	14	0	8
k program	17	59	36
l	100	100	100

Voluntary and cooperative food wholesalers and all corporate chains
 Eng 4 or more supermarkets or 10 or more grocery stores.

Appendix table 5.---Classification of 63 North Central food chains without fluid milk plants that answered questions pertaining to "reasons some stores are not in the central program," 1968-69

Type of firm	Small firms in States--			Medium sized firms in States--			Large firms in States--			All firms in States--		
	With trade practice	Without trade practice	Sub-total	With trade practice	Without trade practice	Sub-total	With trade practice	Without trade practice	Sub-total	With trade practice	Without trade practice	Total
----- Number -----												
Firms with private label:												
Corporate firms	2	0	2	1	0	1	4	0	4	7	0	7
Voluntary firms	0	0	0	1	6	7	19	22	41	20	28	48
All firms	2	0	2	2	6	8	23	22	45	27	28	55
Firms without private label:												
Corporate firms	0	0	0	0	0	0	0	0	0	0	0	0
Voluntary firms	0	0	0	0	0	0	3	5	8	3	5	8
All firms	0	0	0	0	0	0	3	5	8	3	5	8
Total:												
Corporate firms	2	0	2	1	0	1	4	0	4	7	0	7
Voluntary firms	0	0	0	1	6	7	22	27	49	23	33	56
All firms	2	0	2	2	6	8	26	27	53	30	33	63

Appendix table 6.---Scores assigned to "reasons some stores are not in the central milk program" for 63 North Central and Kentucky food chains without fluid milk plants, 1968-69 1/

Reasons <u>2/</u>	Importance in explaining why some stores do not participate in central milk program: <u>3/</u>			
	Mean score	Relative frequency of scores		
		1-39	40-69	70-99
Stores not located where they can be served efficiently under the milk program	56	36	10	54
Most or all nonparticipating stores are independently owned and thus are not closely controlled by the food chain	54	40	5	55
Strong local preferences make it desirable for some stores to stock other brands of milk	51	32	32	36
Stores too small to gain much by participating in the program	33	60	16	24
Store owners have loans or equipment from other milk dealers that tie them to those dealers	32	59	17	24
Store operators do not want to take the responsibility or do the extra work needed to participate in the program	30	67	16	17
Stores do not have the milk storage facilities needed to participate in the program	26	67	20	13
Stores do not meet other requirements to participate in the program	21	78	11	11

1/ Scores of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly important).

2/ Reasons are arranged according to rank of mean score.

3/ Total frequency equals 100.

Appendix table 7.--Scores assigned to "reasons for having private label milk" by 127 North Central and Kentucky food chains without fluid milk plants, 1968-69 1/

Reasons <u>2/</u>	Importance in explaining why chain has private label milk:			
	Mean	Relative frequency of scores <u>3/</u>		
	score	1-39	40-69	70-99
Private label builds consumer loyalty to the chain's own brand	82	4	14	82
Able to obtain private label milk cheaper	68	22	12	66
With private label, retailer has more control over display, advertising, and other promotional practices	63	24	20	56
Able to sell private label milk at lower prices	62	30	9	61
With private label, retailer has more control over pricing	60	30	13	57
Private label makes the chain less dependent upon a given supplier	54	37	14	49
Advertising and promotion costs are less on private label than on processor brands	35	59	13	28
Private label facilitates going into processing in own plant	15	85	4	11

1/ Scores of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly important).

2/ Reasons are arranged according to rank of mean score.

3/ Total frequency equals 100.

Appendix table 8.--Classification of 183 North Central and Kentucky food chains without fluid milk plants that cooperated in the study,
1968-69

Type of firm	(183 firms = 100 percent)											
	Small firms			Medium-sized firms			Large firms			All firms		
	With trade prac- tice	With- out trade prac- tice	Sub- total	With trade prac- tice	With- out trade prac- tice	Sub- total	With trade prac- tice	With- out trade prac- tice	Sub- total	With trade prac- tice	With- out trade prac- tice	Sub- total
	Number											
Corporate firms with private label	13	19	32	9	15	24	7	8	15	29	42	71
Voluntary firms with private label	0	0	0	3	6	9	21	26	47	24	32	56
All firms with private label	13	19	32	12	21	33	28	34	62	53	74	127
Corporate firms without private label ..	6	19	25	3	10	13	1	2	3	10	31	41
Voluntary firms without private label ..	0	3	3	0	2	2	4	6	10	4	11	15
All firms without private label	6	22	28	3	12	15	5	8	13	14	42	56
Corporate firms (total)	19	38	57	12	25	37	8	10	18	39	73	112
Voluntary firms (total)	0	3	3	3	8	11	25	32	57	28	43	71
All firms (total)	19	41	60	19	33	48	33	42	75	67	116	183
	Percent											
Corporate firms with private label	7	11	18	5	8	13	4	4	8	16	23	39
Voluntary firms with private label	0	0	0	2	3	5	11	15	26	13	18	31
All firms with private label	7	11	18	7	11	18	15	19	34	29	41	70
Corporate firms without private label ..	3	10	13	1	6	7	1	1	2	5	17	22
Voluntary firms without private label ..	0	2	2	0	1	1	2	3	5	2	6	8
All firms without private label	3	12	15	1	7	8	3	4	7	7	23	30
Corporate firms (total)	10	21	31	6	14	20	5	5	10	21	40	61
Voluntary firms (total)	0	2	2	2	4	6	13	18	31	15	24	39
All firms (total)	10	23	33	8	18	26	18	23	41	36	64	100

Appendix table 9.---Scores assigned to "reasons for not having private label milk" by 56 North Central food chains without fluid milk plants, 1968-69 1/

Reasons <u>2/</u>	Importance in explaining why chain does not have private label milk:			
	Mean score	Relative frequency of scores <u>3/</u>		
		1-39	40-69	70-99
Consumers have strong preference for advertised brands of milk	71	14	22	64
The food chain follows a policy of marketing only well-established processor brands	64	27	16	57
A good processor brand is needed to draw trade and chain prefers to stock only one brand	57	34	14	52
Volume too small to bargain effectively for private label	26	70	11	19
Suppliers will not sell private label cheaper than their own brands (for equal volumes and types of service)	22	73	13	14
Having a private label brand invites trade practice investigation	6	95	2	3

1/ Scores of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly important).

2/ Reasons are arranged according to rank of mean score.

3/ Total frequency equals 100.

Appendix table 10.--Scores assigned to "factors determining private label supply firms (processors) patronized" for 127 North Central food chains without fluid milk plants, 1968-69 1/

Factors <u>2/</u>	Importance in choice of processor supplying private label brands:			
	Mean score	Relative frequency of scores <u>3/</u>		
		1-39	40-69	70-99
Quality of product	86	6	7	87
Quality of service provided by the processor	82	6	9	85
Processor's ability to supply needed private label milk	80	10	10	80
Price paid for private label milk	64	26	10	64
Popularity of processor's brand with consumers	56	30	20	50
Location of processor's milk plants in relation to location of the chains' stores	56	30	21	49
Earlier business relationships with processor	47	41	25	34
Assistance processor provides in merchandising	38	51	22	27
The chain's policy as to types of suppliers patronized	33	63	11	26
Personal relationships between owners of the dairy and of this food chain .	22	76	9	15
Credit furnished by processor	10	88	9	3
Equipment furnished by processor	6	93	5	2

1/ Scores of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly important).

2/ Factors are arranged according to rank of mean score.

3/ Total frequency equals 100.

Appendix table 11.--Scores assigned to "factors determining processor brand supply firms (processors) patronized" for 129 North Central and Kentucky food chains without fluid milk plants, 1968-69 1/

Factors <u>2/</u>	Importance in choice of processors supplying processor brands:			
	Mean score	Relative frequency of scores <u>3/</u>		
		1-39	40-69	70-99
Popularity of processor's brand with consumers	84	2	9	89
Quality of product	81	9	6	85
Quality of service provided by processor.	81	6	8	86
Processor's ability to supply the chain adequately with milk	73	15	14	71
Price paid for processor brand milk	52	39	12	49
Location of processor's milk plants in relation to location of the chain's stores	49	36	24	40
Earlier business relationships with processor	46	40	23	37
Assistance processor provides in merchandising	39	50	24	26
The chain's policy as to types of suppliers patronized	35	58	17	25
Personal relationships between owners of the dairy and of this food chain ...	24	71	12	17
Credit furnished by processor	13	85	8	7
Equipment furnished by processor	8	92	5	3

1/ Scores of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly important).

2/ Factors are arranged according to rank of mean score.

3/ Total frequency equals 100.

Reasons <u>2/</u>	Importance in decision to change suppliers of:							
	Processor brands <u>3/</u>				Private label brands <u>4/</u>			
	Relative frequency of scores <u>2/</u>				Relative frequency of scores <u>5/</u>			
	Mean score	1-39	40-69	70-99	Mean score	1-39	40-69	70-99
To obtain more or better service	61	23	23	54	68	23	6	71
To obtain cost savings	59	33	13	54	69	23	12	65
To obtain product of higher quality	48	46	13	41	40	56	12	32
To obtain merchandising services offered by supplier	28	67	13	20	22	73	12	15
To obtain more freedom for the firm in choice of brands	24	69	15	16	-	-	-	-
To obtain more generous advertising allowances	22	77	8	15	-	-	-	-
To get supplier who would provide private label brands	22	74	10	16	-	-	-	-
Offer of better credit terms from supplier	9	90	2	8	5	94	3	3
Offer of free equipment from supplier	5	95	5	0	2	100	0	0
New supplier able to supply stores over a wider area	-	-	-	-	33	65	3	32
To buy from a supplier who did not require chain to stock his processor brand	-	-	-	-	10	91	0	9

- 1/ Scores of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly important).
2/ Reasons are arranged according to rank of mean score pertaining to decision to change suppliers of processor brands.
3/ 39 chains without milk plants.
4/ 34 chains without milk plants.
5/ Total frequency equals 100.

Appendix table 13.--Scores assigned to "arguments used in negotiations with milk processors" by 178 North Central and Kentucky food chains without fluid milk plants, 1968-69 1/

Arguments <u>2/</u>	Effectiveness in negotiating with milk processors:			
	Mean score	Relative frequency of scores <u>3/</u>		
		1-39	40-69	70-99
Contention that another processor offered a lower price	43	49	14	37
Suggestion that you may transfer business to a competitor unless processor makes concessions	32	61	15	24
Promise of larger volume if processor will grant more favorable terms	31	64	11	25
Criticism of inadequacies in processor's product or service .	28	68	11	21
Contention that you will purchase only private label brand unless processor makes concessions	10	90	7	3
Suggestion that your firm has made a study of processing its own milk	10	89	5	6
Suggestion that your firm is seriously considering processing its own milk	10	89	5	6

1/ Scores of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly important).

2/ Arguments are arranged according to rank of mean score.

3/ Total frequency equals 100.

Appendix table 14.--Scores assigned to "reasons the food chain does not operate milk plants" by 173 North Central and Kentucky food chains without fluid milk plants, 1968-69 1/

Reasons <u>2/</u>	Importance as reasons chain does not operate fluid milk plants:			
	Mean score	Relative frequency of scores <u>3/</u>		
		1-39	40-69	70-99
Volume of milk insufficient for efficient plant	58	37	6	57
Cannot make appreciable savings by doing own processing	48	44	10	46
To avoid getting involved in another operation	44	50	9	41
Returns on capital higher in other enterprises	35	58	12	30
Unable to obtain competent personnel and know-how	33	60	12	28
Stores too scattered to be served effectively from a plant	26	71	8	21
Procuring needed raw milk would be a serious problem	22	74	8	18
Concern about quality problems in own plant	19	79	8	13
Waiting for opportune time to build or buy a plant	15	84	6	10

1/ Scores of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly important).

2/ Reasons are arranged according to rank of mean score.

3/ Total frequency equals 100.

Appendix table 15.--Scores assigned to "reasons for operating own milk plants and distribution system," by 13 North Central food chains with fluid milk plants, 1968-69 ^{1/}

Reasons ^{2/}	Importance in decision to process and distribute own milk:			
	Mean score	Relative frequency of scores ^{3/}		
		1-39	40-69	70-99
General reasons:				
To obtain savings in distribution costs	78	8	15	77
To obtain savings in plant operations	77	8	15	77
To obtain a product of higher quality	61	23	23	54
To obtain a product of uniform quality	61	23	23	54
To bring more decisions under control of the firm	50	38	8	54
To obtain specific product qualities	46	54	15	31
To expand volume of business of the firm	43	46	8	46
To obtain desired services	42	46	31	23
To enhance prestige of firm's own brand	42	38	23	39
To avoid risk and uncertainty of negotiations with suppliers	36	46	39	15
To obtain more freedom in choice of brands	22	70	15	15
To reduce problems with trade practice regulations	14	92	0	8
Reasons related to services:				
Savings in delivery (plant platform to store)	91	0	8	92
Savings in processing (including cold room)	72	15	8	77
Savings in administration	65	23	15	62
Savings in advertising, promotion, and sales	58	31	23	46
Savings in procurement & reduced number of fieldmen	26	69	8	23
Reasons related to savings:				
Obtaining dock, drop, or other limited service delivery	67	15	23	62
More effective preordering of milk	56	23	31	46
Central billing	40	46	31	23
Obtaining delivery at a specific time	37	54	15	31
Having milk placed in backroom or outside cooler	24	70	15	15
Having price marked on milk	7	92	0	8
Servicing counter (display case)	5	92	8	0

^{1/} Scores of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly important).

^{2/} Reasons are arranged according to rank of mean score.

^{3/} Total frequency equals 100.

Appendix table 16.--Scores assigned to "factors determining location of this firm's milk plants" by 13 North Central food chains with fluid milk plants, 1968-69 1/

Factors <u>2/</u>	Importance in determining location of fluid milk plants:			
	Mean score	Relative frequency of scores <u>3/</u>		
		1-39	40-69	70-99
Relation of plant location to stores of the food chain	79	8	15	77
Relation of plant location to location of food chain's distribution centers	76	15	8	77
Highways and other transportation facilities serving the location	63	23	8	69
Delivered cost of raw milk at plant	42	54	8	38
Proximity of plant to supplies of raw milk..	40	62	8	30
Plant facilities available at that location at comparatively low cost	30	62	23	15
Labor supply and wage rates in area where plants are located	25	69	8	23

1/ Scores of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly important).

2/ Factors are arranged according to rank of mean score.

3/ Total frequency equals 100.

Appendix table 17.--Scores assigned to "factors determining processor brand supply firms (processors) patronized by 6 North Central food chains with fluid milk plants, 1968-69 1/

Factors <u>2/</u>	Importance in choice of processors supplying processor brands:			
	Mean	Relative frequency of scores <u>3/</u>		
	Score	1-39	40-69	70-99
Processor's ability to supply the chain adequately with milk	78	17	0	83
Quality of product	77	12	0	88
Popularity of processor's brand with consumers	75	17	0	83
Quality of service provided by processor	68	17	17	66
Earlier business relationships with processor	54	33	17	50
Location of processor's milk plants in relation to location of the chain's stores	41	33	67	0
Price paid for processor's brand	37	50	17	33
Assistance processor provides in merchandising	27	66	17	17
The chain's policy as to types of suppliers patronized	20	83	0	17
Personal relationships between owners of the dairy and of the food chain	18	83	0	17
Equipment furnished by processor	4	100	0	0

1/ Scores of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly important).

2/ Factors are arranged according to rank of mean score.

3/ Total frequency equals 100.

Appendix table 18.--Scores assigned to "arguments used in negotiations with milk suppliers" by 7 North Central food chains with fluid milk plants, 1968-69 1/

Arguments <u>2/</u>	Effectiveness in negotiating with fluid milk processors:			
	Mean score	Relative frequency of scores <u>3/</u>		
		1-39	40-69	70-99
Criticism of inadequacies in Processor's product or service ..	38	57	0	43
Suggestion that you may transfer business to a competitor	36	57	0	43
Attention that another Processor offered a lower price .	29	71	0	29
Promise of larger volume if Processor will grant more favorable terms	16	86	0	14
Attention that you will purchase only private label brand unless Processor makes concessions	4	100	0	0

1/ Scores of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly important).

2/ Arguments are arranged according to rank of mean score.

3/ Total frequency equals 100.

Appendix table 19.--State milk control laws and dairy trade practice regulations in the North Central Region and Kentucky, by State, 1968

State	State milk control law		State trade practice regulation of the dairy industry			No regulation of either type at the State level
	Minimum wholesale price	Minimum retail price	Price discrimination	Sales below cost	Other	
Illinois----						X
Indiana-----						X
Iowa-----			X		X	
Kansas-----						X
Kentucky----			X	X	X	
Michigan----						X
Minnesota---			X	X	X	
Missouri----			X	X	X	
Nebraska----			X	X	X	
N. Dakota---	X	X				
Ohio-----						X
S. Dakota---	X	X				
Wisconsin---			X	X	X	

Reproduced from U.S. Department of Agriculture, Dairy Situation, DS-323, Nov. 1968, pp. 36-41.

Appendix table 20.--Scores assigned to "effects of dairy trade practice regulations" by 83 North Central and Kentucky food chains without fluid milk plants, and 6 food chains with plants, 1968-69 1/

Effect <u>2/</u>	Firms without plants:				Firms with plants:			
	Mean score	Relative frequency of scores 1-39	40-69	70-99	Mean score	Relative frequency of scores 1-39	40-69	70-99
Limit price reductions obtainable from processors	57	29	19	52	56	17	50	33
Prohibit effective merchandising practices such as tie-in sales	53	39	12	49	65	17	17	66
Increase store profits on milk	48	37	25	38	35	33	50	17
Set minimum prices below which stores cannot sell milk	45	49	9	42	54	33	17	50
Make milk a less effective traffic builder ...	44	47	12	41	65	17	17	66
Make it difficult to obtain justifiable allowances from processors	43	48	17	35	42	50	17	33
Make it difficult to obtain useful services from processors	27	70	11	19	12	83	17	0

1/ Scores of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly important).

2/ Statements are arranged according to rank of mean score of firms without plants.

3/ Total frequency equals 100.

Appendix table 21.--Scores assigned to "reactions to dairy trade practice regulations" by 183 North Central and Kentucky food chains without fluid milk plants, 1968-69 1/

Statements <u>2/</u>	Extent of agreement or disagreement with statement:					
	Mean score	Relative frequency of scores <u>3/</u>				
		-99 to -70	-69 to -1	0	1 to 69	70 to 99
Dairy trade regulation is most beneficial to milk processors	23	11	8	30	21	30
Dairy trade practice regulation is effective	6	24	10	21	19	26
Dairy trade practice regulation is injurious to consumers	5	22	14	21	17	26
Dairy trade practice regulation has resulted in wider store margins on milk	4	19	11	26	26	18
Dairy trade practice regulation hinders introduction of new techniques in milk distribution ..	2	20	12	35	13	20
Dairy trade practice regulation is in the best interest of the dairy industry	0	25	13	22	18	22
Dairy trade practice regulation has eliminated objectionable practices in the marketing of milk ...	-1	21	14	27	20	18
Dairy trade practice regulation is in the interest of this firm	-11	28	18	22	12	20
Dairy trade practice regulation has led to increased sales of milk on home delivery routes	-15	23	17	41	10	9

1/ Scores of respondents were based on a scale ranging from -99 (strongly disagree) through 0 (uncertain or no opinion) to 99 (strongly agree).

2/ Statements are arranged according to rank of mean score.

3/ Total frequency equals 100.

Table 22.--Scores assigned to "reactions about dairy trade practice regulations" by 13 North Central food chains with fluid milk plants, 1968-69 1/

Statement <u>2/</u>	Extent of agreement or disagreement with statement:					
	Mean score	Relative frequency of scores <u>3/</u>				
		-99 to -70	-69 to -1	0	1 to 69	70 to 99
ide practice regulation rious to consumers	40	0	7	31	16	46
ide practice regulation ; introduction of new ques in milk distribu-	33	0	15	31	16	38
ide practice regulation : beneficial to milk sors	24	8	0	31	38	23
ide practice regulation l to increased sales of home delivery routes .	21	0	15	54	0	31
ide practice regulation ulted in wider store on milk	4	23	0	31	31	15
ide practice regulation ective	-15	23	23	15	23	16
ide practice regulation he interest of this	-26	23	31	31	7	8
ide practice regulation minated objectionable es in the marketing :	-30	46	7	8	31	8
ide practice regulation he best interest of ry industry	-37	31	31	31	7	0

es of respondents were based on a scale ranging from 1 (of no importance) to 99 (highly
).
ements are arranged according to rank of mean score.
1 frequency equals 100.

Appendix table 23.--Scores assigned to "reactions about fluid milk processors" by 183 North Central and Kentucky food chains without fluid milk plants, 1968-69 1/

Statement <u>2/</u>	Extent of agreement or disagreement with statement:					
	Mean Score	Relative frequency of scores <u>3/</u>				
		-99 to -70	-69 to -1	0	1 to 69	70 to 99
Fluid milk processors have little to gain by establishing their own dairy stores	43	6	11	20	13	50
Fluid milk processors have readily adjusted their marketing practices to the buying policies of food chains	27	8	14	18	29	31
Small fluid milk processors generally cannot serve supermarket chains satisfactorily	15	15	14	18	27	26
Fluid milk processors resist granting as large discounts as are justifiable on private label milk	-3	15	17	41	14	13
Many fluid milk processors have tried to prevent the shift from home delivery to store sales of milk	-6	24	16	24	18	18
Fluid milk processors compete too aggressively for the accounts of supermarket chains	-15	27	22	21	18	12
Fluid milk processors have done a poor job of promoting milk	-22	34	27	11	14	14
Fluid milk processors cannot deliver milk to supermarkets as efficiently as food chains can do it	-24	37	20	18	10	15
Fluid milk processors have been slow to provide limited service delivery to supermarkets	-24	33	28	13	15	11
Fluid milk processors have been slow to adjust delivery services to the needs of supermarkets	-25	38	28	6	10	18
Fluid milk processors too strongly resist packaging private label brands of milk for food chains	-36	32	35	21	6	6
Fluid milk processors cannot process milk for supermarkets as efficiently as food chains can do it	-45	46	19	27	3	5
Fluid milk processors should have their own dairy stores as major outlets for their milk	-74	75	12	11	2	

1/ Scores of respondents were based on a scale ranging from -99 (strongly disagree) through 0 (uncertain or no opinion) to 99 (strongly agree).

2/ Statements are arranged according to rank of mean score.

3/ Total frequency equals 100.

Appendix table 24.--Scores assigned to "reactions about fluid milk processors" by 13 North Central food chains with fluid milk plants, 1968-69 ^{1/}

Statement <u>2/</u>	Extent of agreement or disagreement with statement:					
	Mean score	Relative frequency of scores <u>3/</u>				
		-99 to -70	-69 to -1	0	1 to 69	70 to 99
Many fluid milk processors have tried to prevent the shift from home delivery to store sales of milk	63	0	0	15	23	62
Fluid milk processors have done a poor job of promoting milk	39	7	0	16	46	31
Fluid milk processors have been slow to adjust delivery services to the needs of supermarkets	39	8	15	15	31	31
Fluid milk processors resist granting as large discounts as are justifiable on private label milk	26	8	7	31	16	38
Fluid milk processors have been slow to provide limited service delivery to supermarkets	23	7	23	23	16	31
Fluid milk processors have little to gain by establishing their own dairy stores	16	0	16	54	15	15
Fluid milk processors can process milk for supermarkets as efficiently as food chains can do it in their own plants	14	15	31	0	16	38
Small fluid milk processors generally can serve supermarket chains satisfactorily	9	0	54	8	7	31
Fluid milk processors compete too aggressively for the accounts of supermarket chains	1	31	15	23	8	23
Fluid milk processors have readily adjusted their marketing practices to the buying policies of food chains	-6	23	15	8	46	8
Fluid milk processors should have their own dairy stores as major outlets for their milk	-19	23	16	38	23	0
Fluid milk processors can deliver milk to supermarkets as efficiently as food chains can do it	-26	46	23	0	8	23
Fluid milk processors too strongly resist packaging private label brands of milk for food chains	-26	16	46	7	31	0

^{1/} Scores of respondents were based on a scale ranging from -99 (strongly disagree) through 0 (uncertain or no opinion) to 99 (strongly agree).

^{2/} Statements are arranged according to rank of mean score.

^{3/} Total frequency equals 100.

Appendix table 25.--Scores assigned to "reactions about wholesale milk drivers' unions" by 183 North Central and Kentucky food chains without fluid milk plants, 1968-69 1/

Statements <u>2/</u>	Extent of agreement or disagreement with statement:					
	Mean score	Relative frequency of scores <u>3/</u>				
		-99 to -70	-69 to -1	0	1 to 69	70 to 99
Most unionized wholesale milk drivers give good service to food stores	35	6	5	24	33	32
Members of wholesale milk drivers' unions are paid more for delivering milk than most other truckers are paid for similar services	19	3	3	64	9	21
Wholesale milk drivers' earnings in your area are too high	14	8	7	55	10	20
Wholesale milk drivers' union contracts impede efficient delivery of milk to supermarkets ..	14	8	10	47	16	19
Milk drivers' unions serve a useful purpose	7	12	11	34	30	13
Milk drivers' unions have no concern about preserving the business of present milk bottlers	6	10	12	51	11	16
Members of the wholesale milk drivers' union give better service than truckers who pick up milk at the plant dock	-10	16	7	63	7	7
Wholesale milk drivers should be paid on a commission basis	-16	28	13	38	8	13
Wholesale milk drivers need to be salesmen	-16	35	15	16	17	17
Wholesale milk drivers ought to service the milk cases in supermarkets	-18	33	18	20	11	18
Wholesale milk drivers' unions readily adapt driver pay plans to changing delivery situations ...	-23	27	6	60	4	3
Full service delivery of milk by wholesale milk drivers is needed by supermarket chains	-33	43	18	17	9	13

1/ Scores of respondents were based on a scale ranging from -99 (strongly disagree) through 0 (uncertain or no opinion) to 99 (strongly agree).

2/ Statements are arranged according to rank of mean score.

3/ Total frequency equals 100.

Appendix table 26.--Scores assigned to "reactions about wholesale milk drivers' unions" by 13 North Central food chains with fluid milk plants, 1968-69 1/

Statements <u>2/</u>	Extent of agreement or disagreement with statement:					
	Mean score	Relative frequency of scores <u>3/</u>				
		-99 to -70	-69 to -1	0	1 to 69	70 to 99
Members of wholesale milk drivers' unions are paid more for delivering milk than most other truckers are paid for similar services	71	0	0	23	0	77
Most unionized wholesale milk drivers give good service to food stores.....	61	0	0	15	31	54
Wholesale milk drivers' earnings in your area are too high.....	43	8	0	38	8	46
Wholesale milk drivers' union contracts impede efficient delivery of milk to supermarkets	23	8	8	38	23	23
Milk drivers' unions have no concern about preserving the business of present milk bottlers	23	16	15	23	8	38
Milk drivers' unions serve a useful purpose	12	8	15	38	23	16
Members of the wholesale milk drivers' union give better service than truckers who pick up milk at the plant dock	-14	23	23	23	15	16
Wholesale milk drivers need to be salesmen	-37	54	16	0	15	15
Wholesale milk drivers ought to service the milk cases in supermarkets	-41	46	8	31	15	0
Wholesale milk drivers should be paid on a commission basis	-56	69	0	23	0	8
Wholesale milk drivers' unions readily adapt driver pay plans to changing delivery situations	-69	69	8	15	8	0
Full service delivery of milk by wholesale milk drivers is needed by supermarket chains	-79	77	23	0	0	0

1/ Scores of respondents were based on a scale ranging from -99 (strongly disagree) through 0 (uncertain or no opinion) to 99 (strongly agree).

2/ Statements are arranged according to rank of mean score.

3/ Total frequency equals 100.